# Connect the Community Again Participation as a tool for the redesign of Vacant Heritage

# Chi Liu, HA VH Graduation Studio, TU Delft



# LOCATION



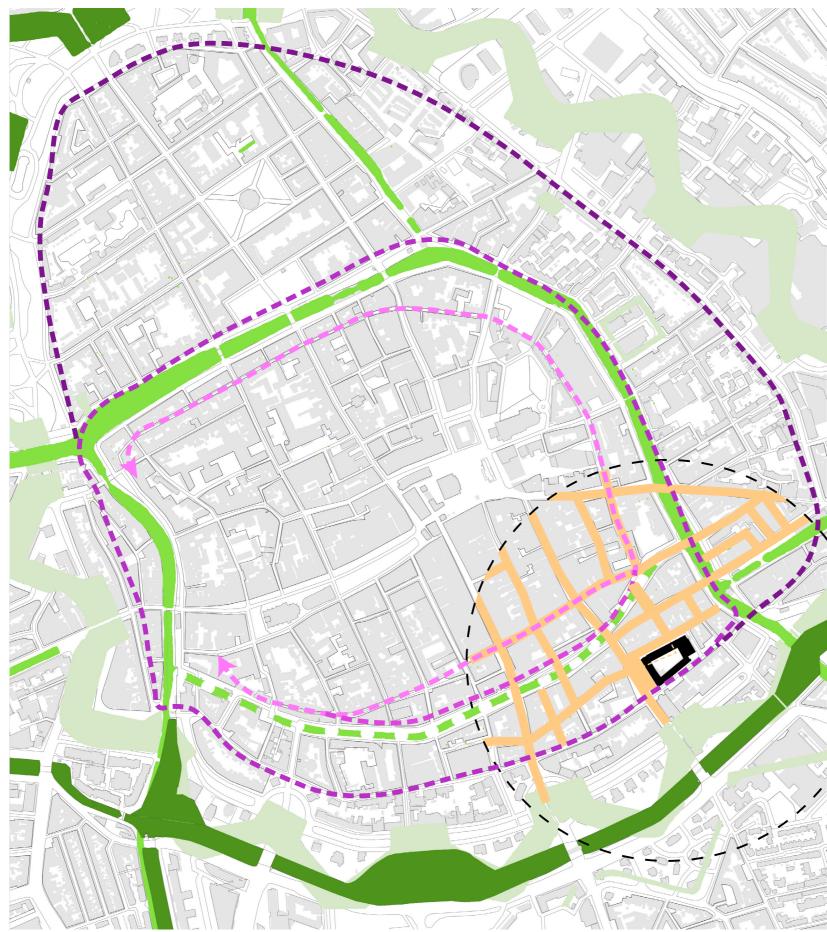
Groningen inner city



Historical urban fabric

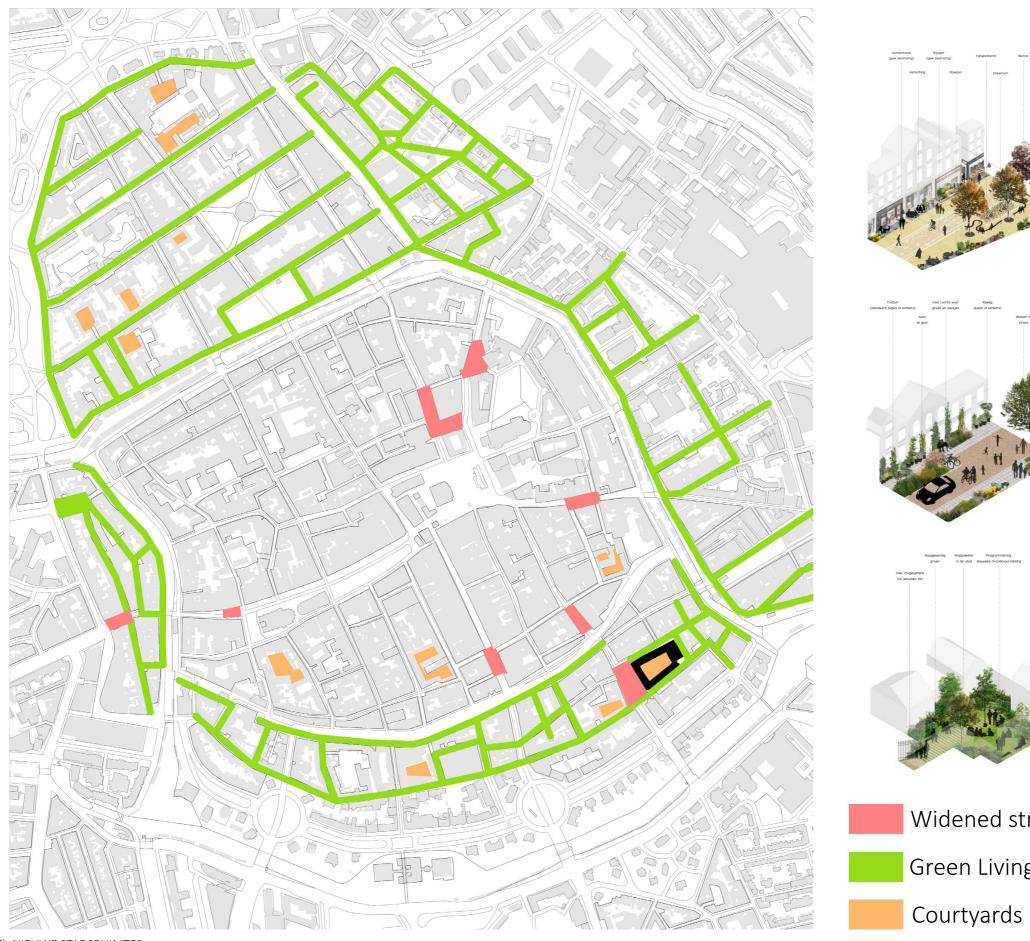
https://www.google.com/maps
 https://siebeswart.photoshelter.com/image/I0000EAC72Uw84QY

# **THE CITY GRONINGEN: Values & Attributes**



City boundary 1150 City boundary 1340 City boundary 1560 City boundary 1650 Historic street pattern Historic canal system Historic canal system (hidden) 19th century new canal 19th century canal (changed)

# **THE CITY GRONINGEN: Planning of Public Space**





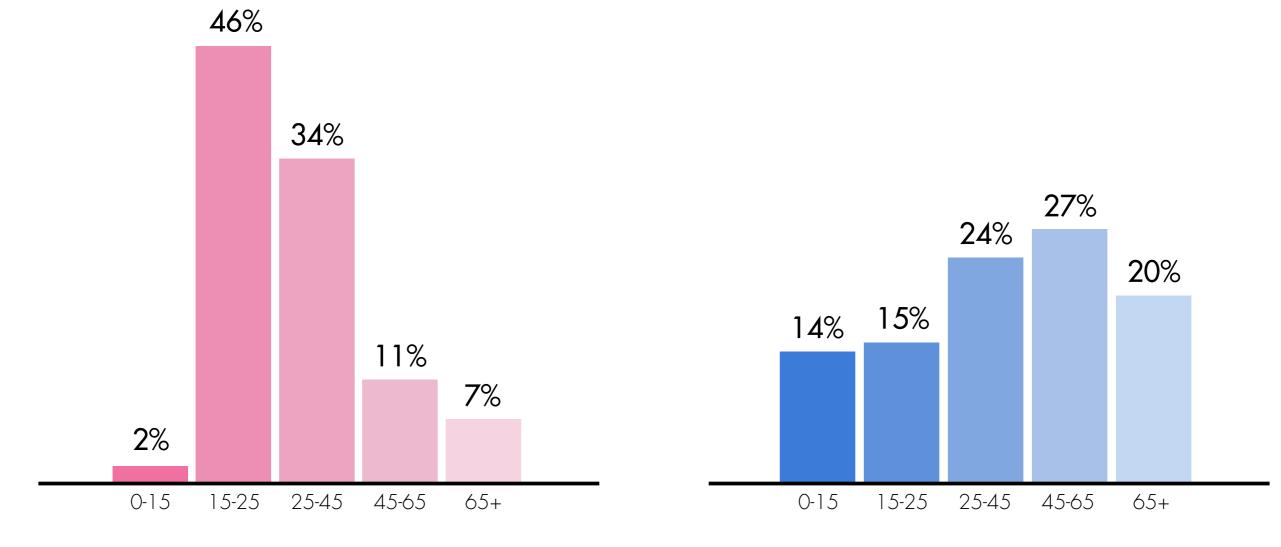




Widened streets

Green Living Streets

# **THE CITY GRONINGEN: Demographics**



Age distribution of Groningen inner city

Age distribution of Groningen province

# **THE BUILDING: Historical Development**



1971-1972 Municipal architect Ele de Haas

1994-1996 Local office De Zwarte Hond



# THE BUILDING: Space



Courtyard & Inside Facade



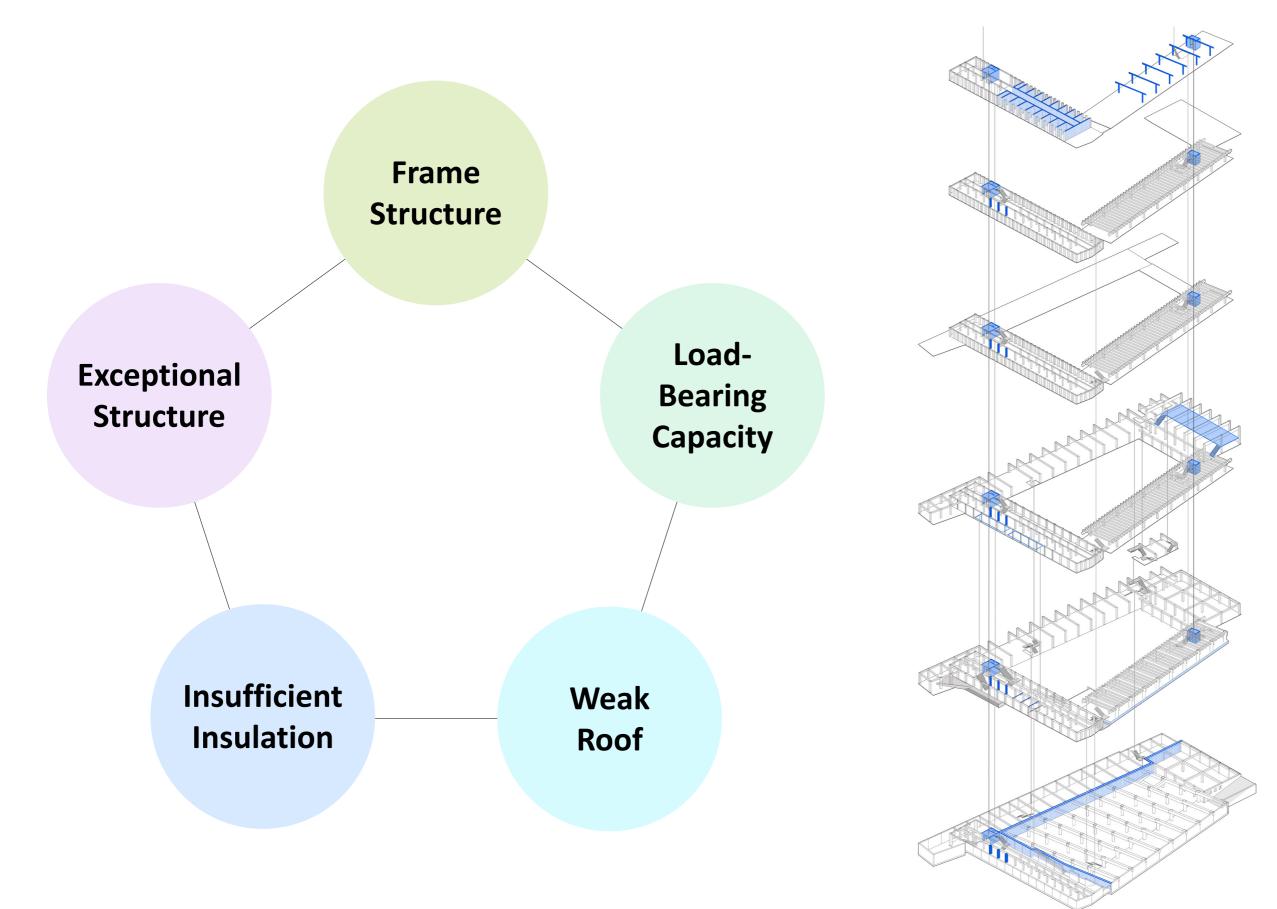
### Corridor

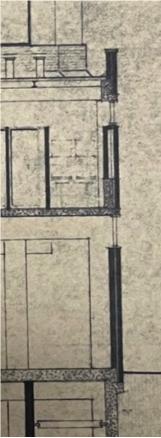
# THE BUILDING: Space

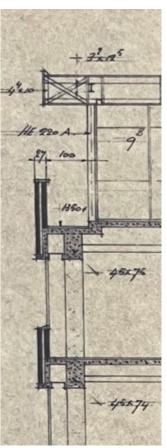


Canteen

# **THE BUILDING: Technology**







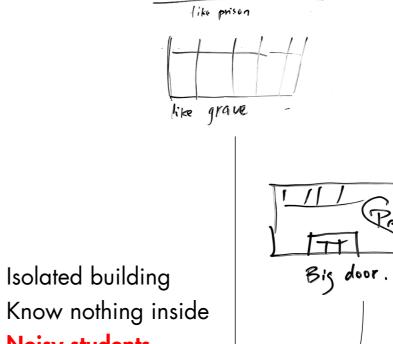
Source: Groninger Archieven

# **FACADE & EXTERIOR SPACE: Interview & Cognitive Mapping**

Blue wall - cold but quiet Trees - Lively but not enough Windows - sense of privacy

Windows - privacy More green & sitting/ meeting place for the community No more student housing!

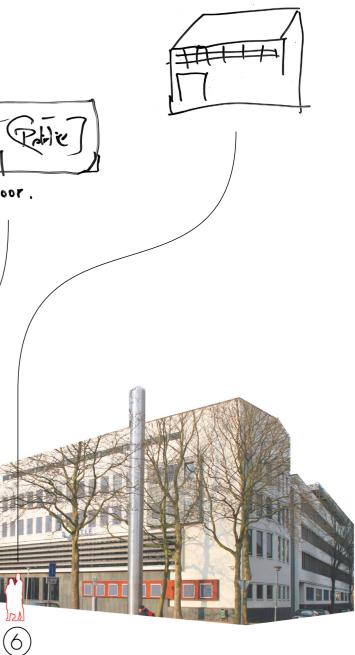
(2)



(4)

Isolated building

Noisy students



# FACADE & EXTERIOR SPACE: Mapping of the Results



North Facade

Positive



# **KEY INFORMANT SET: How is the site?**

**City** Historic value Future city Lacking diversity

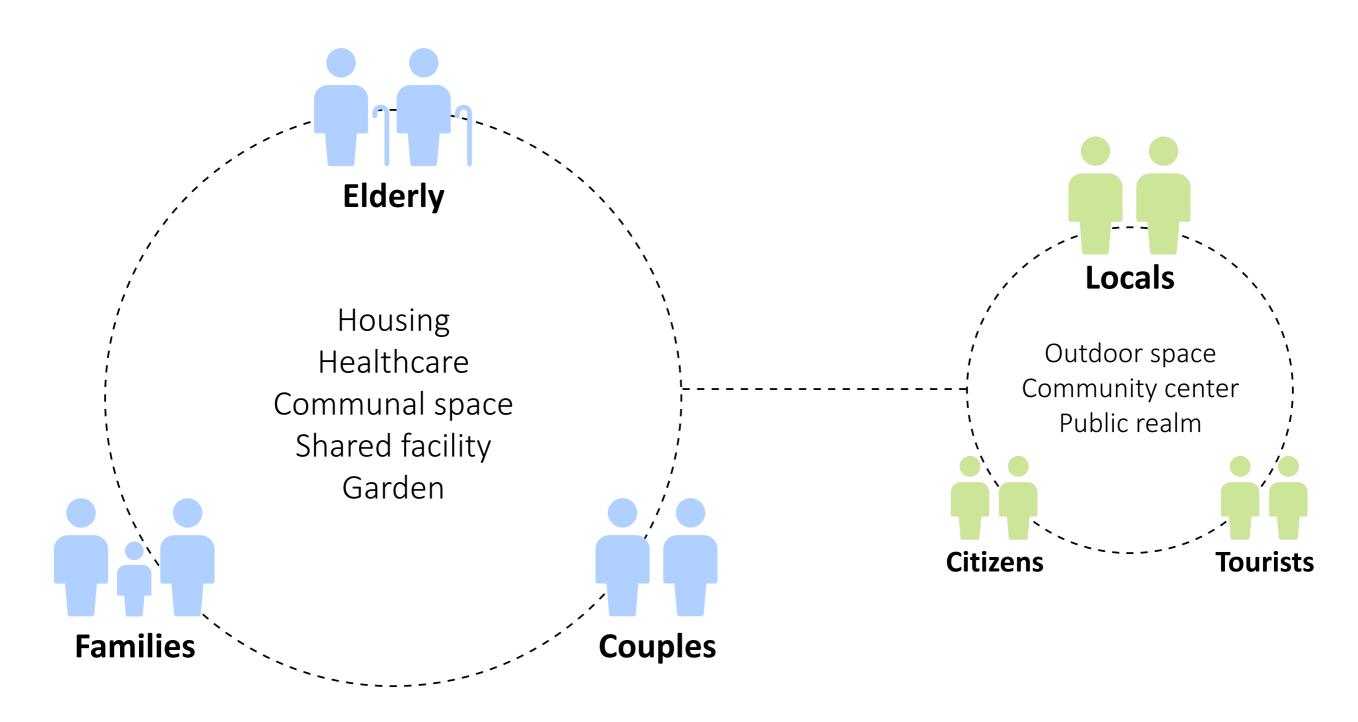
# Building

Isolation Institution Capacity

### Facade

Police identity Association Contradiction

# **TARGET USERS & NEW FUNCTIONS**



Couples : Families : Elderly ≈ 1 : 1 : 1 Current Size: 13,500 m<sup>2</sup>, Added Volume: 2500 m<sup>2</sup>, 65 households

# **4 LEVELS OF COMMUNAL SPACE**



#### Gym Shops Supermarket Barber's Hotel

# **Public** courtyard

Gardens Playground Greenery Pavillions Greenhouse

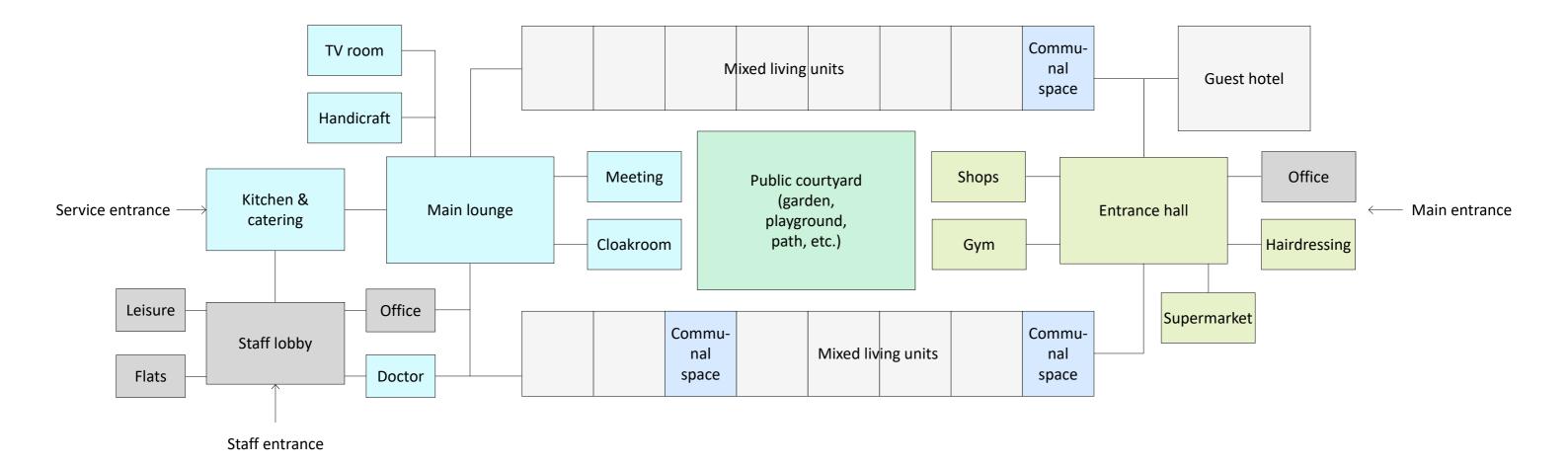
# Community center

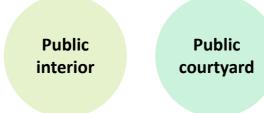
Kitchen Catering Workshop Meeting room Auditorium

# **Distributed** shared space

Pocket library Laundry Shared storage Sports place Sitting area

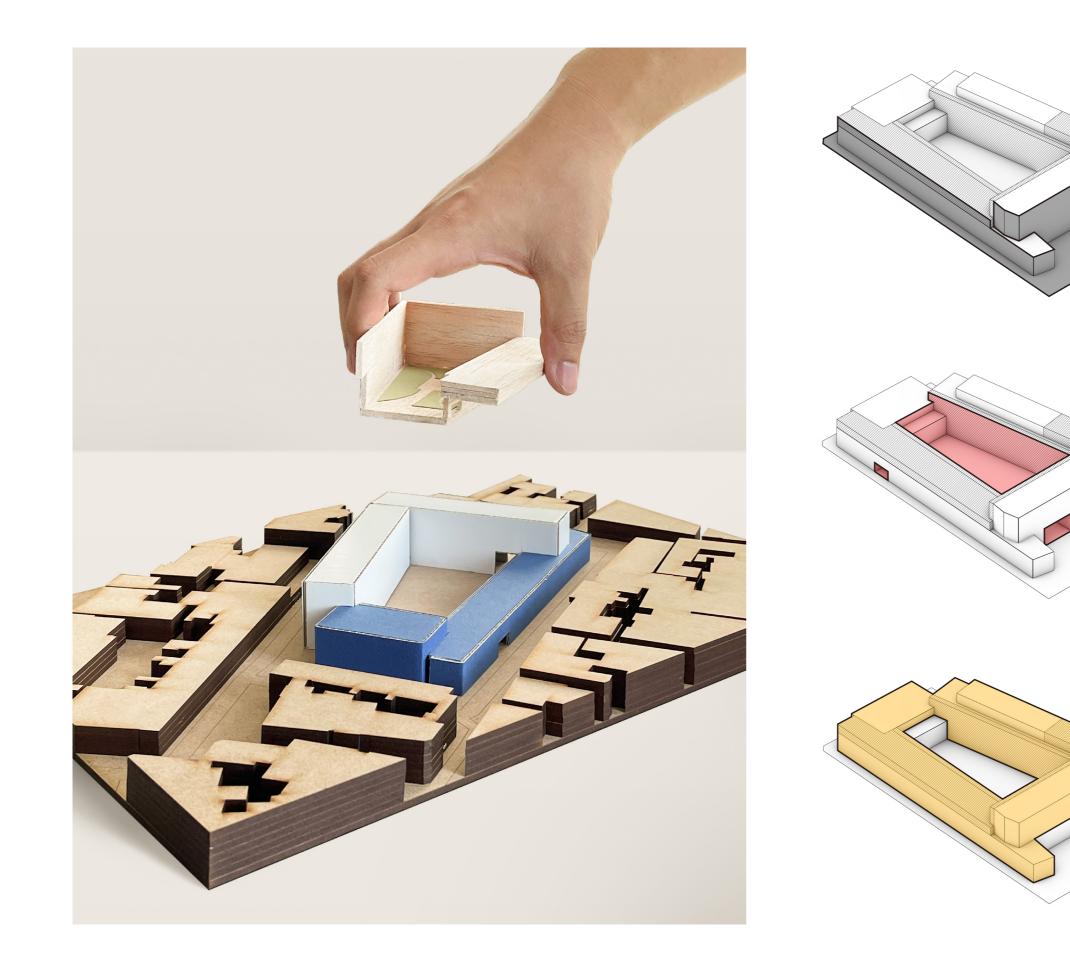
# **PROGRAM DISTRIBUTION**







### **REDESIGN PROPOSAL: Connect the Community Again!**



### Sensitive Surface

Treat the facades and exterior space in a modest manner

### Inclusive Core

Add volumes and create new perceptions inside the block

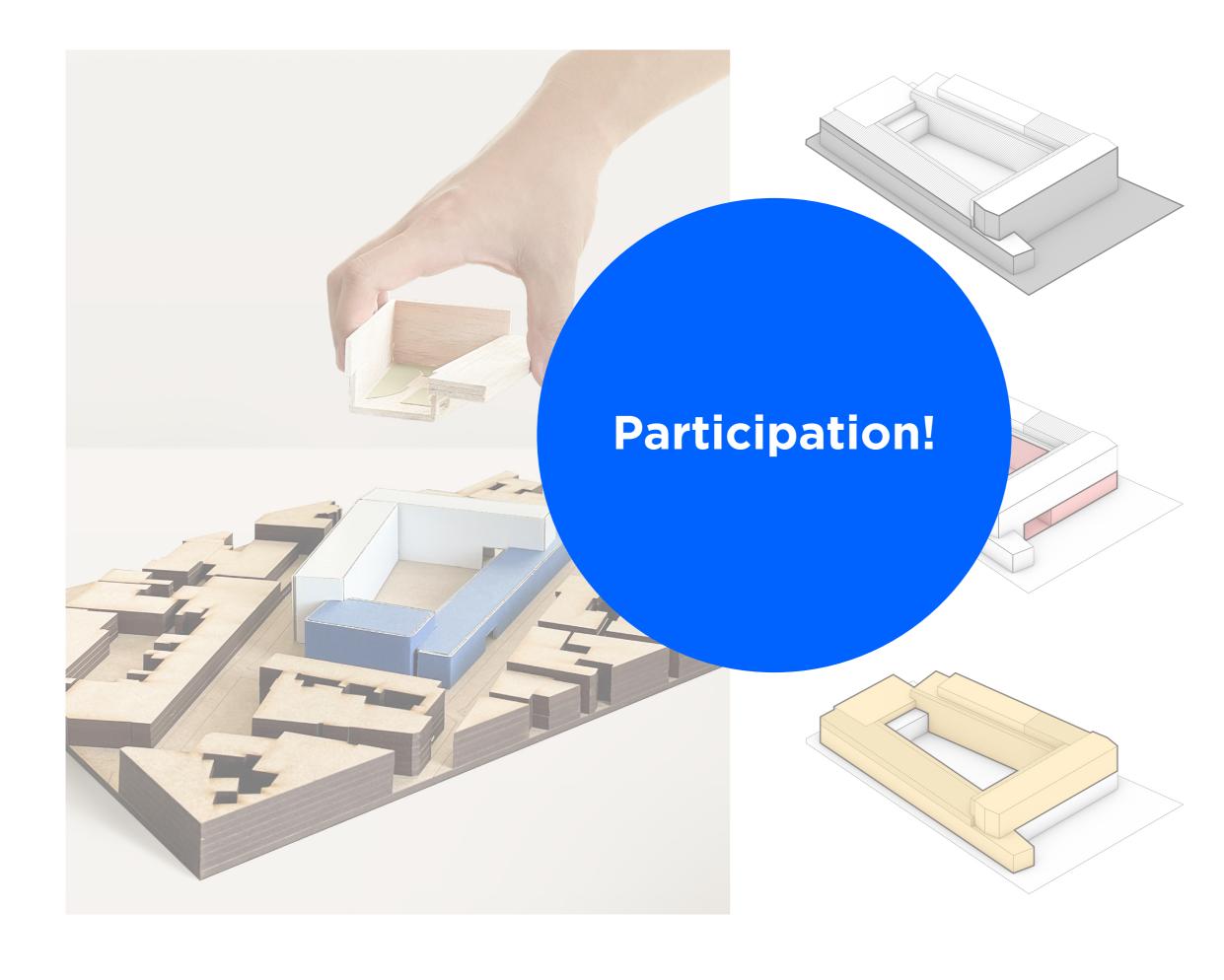
#### Attentive Home

Reorganize the interior and encourage comfortable co-living



Added volumes

### **REDESIGN PROPOSAL: Connect the Community Again!**



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Added volumes

# WHY PARTICIPATION?

### **Threat**

"Rapid and frequently uncontrolled development is transforming urban areas and their settings, which may cause fragmentation and deterioration to urban heritage with deep impacts on community values"



# **Opportunity**

"The Faro Convention emphasizes the benefits that heritage generates for the economy, society and the environment, but for this to happen, its protection and valorisation must be shared and inclusive."



#### ---Recommendation on the Historic Urban Landscape

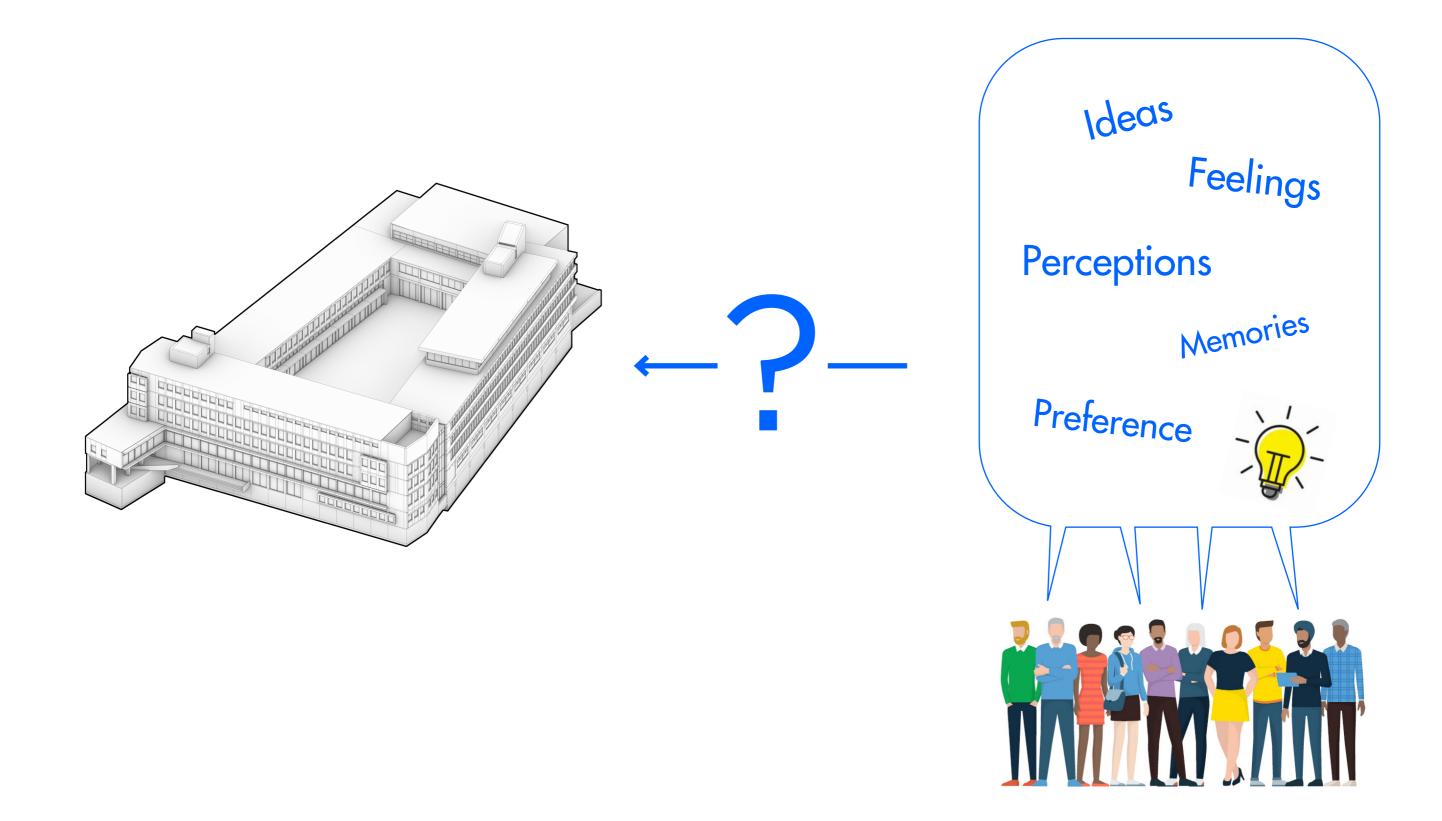
---Faro Convention







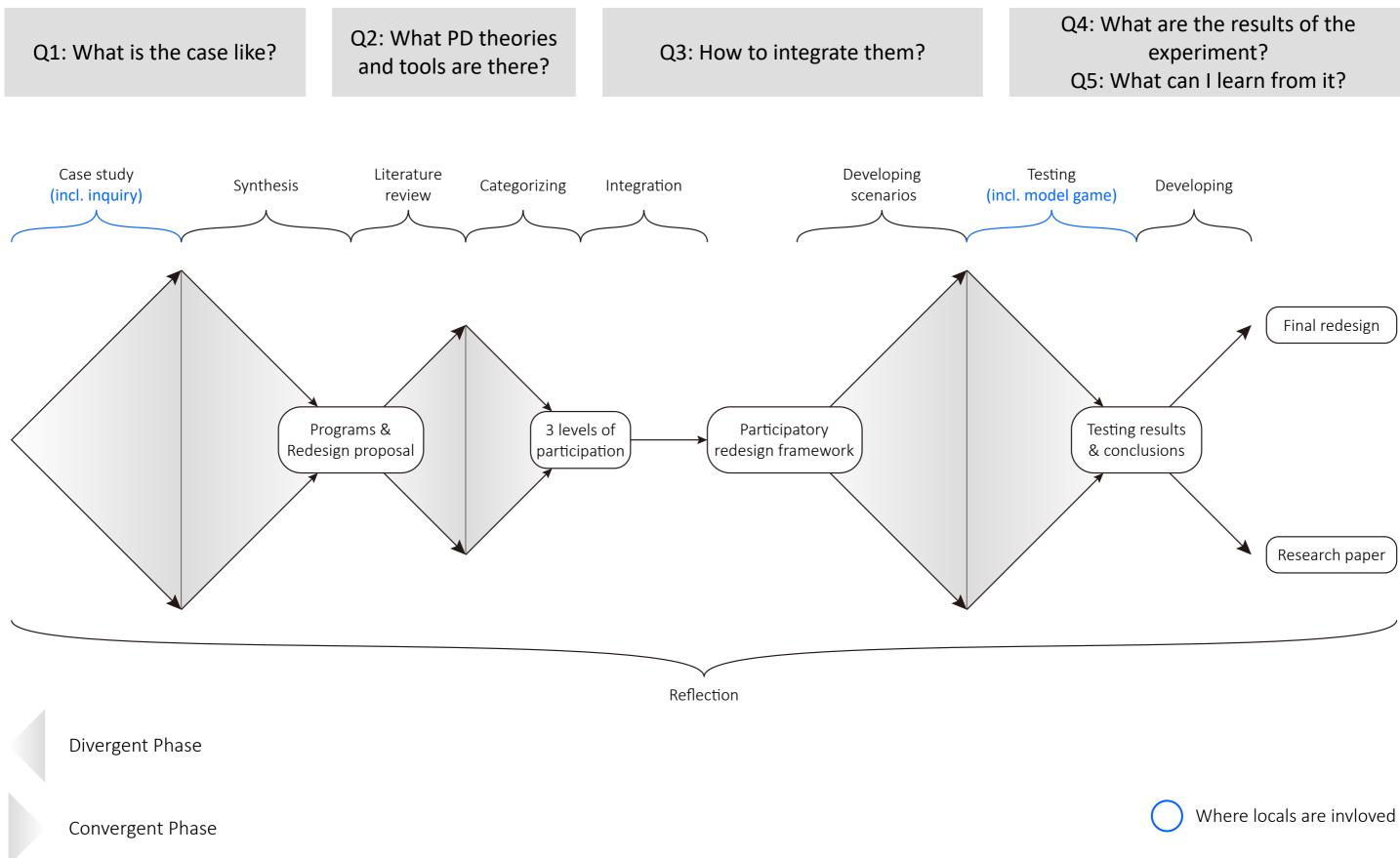
# HOW CAN PARTICIPATION HELP?

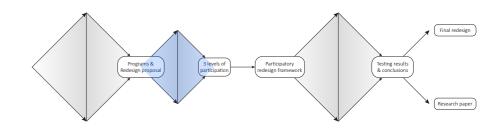


# **RESEARCH QUESTION**

# How can participation be used as a tool for vacant heritage redesign?

# **RESEARCH & DESIGN STRUCTURE**

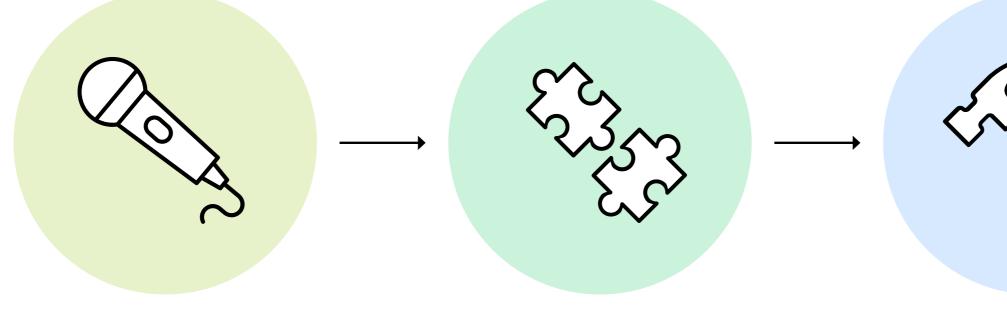




# Q2:

# What participatory design theories and tools are there?

# **3 LEVELS OF PARTICIPATION**



Inquiry Getting input from participants

Testing

Involving participants in codesign and testing

References:

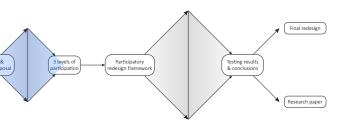
Binder, Thomas, and Eva Brandt. "The Design:Lab as Platform in Participatory Design Research." CoDesign 4, no. 2 (2008): 115-29. https://doi.org/10.1080/15710880802117113.

"Research on Participatory Design in Architecture." 2020, https://rosalialeung.com/research-on-participatory-design-in-architecture.

Martin, Bella, and Bruce M. Hanington. Universal Methods of Design : 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions. Beverly, MA: Rockport Publishers, 2012. http://site.ebrary.com/id/10690608. "Video: Participatory Design Revitalises Harvey Milk Plaza." 2018, https://metropolismag.com/projects/participatory-design-harvey-milk-plaza-video/.

Rowe, Peter G. Design Thinking. Cambridge, Mass.: MIT Press, 1987.

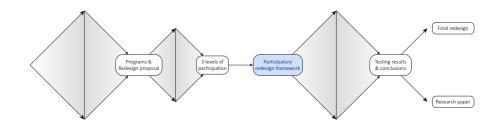
Sanders, Elizabeth B. N., Eva Brandt, and Thomas Binder. "A Framework for Organising the Tools and Techniques of Participatory Design." In Proceedings of the 11th Biennial Participatory Design Conference, 195-98, 2010.





### Acting

#### Bottom-up management and construction

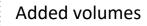


Q3:

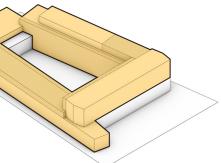
How to apply the 3 levels of participation to **Politiebureau Groningen Centrum?** 



	Sensitive surface			Inclusive core				Attentive home			
Design objects Levels of participation	Outside facades	Front square	Surrounding streets	Courtyard	Community center	Public interior	Inside facades	Added galleries	Rooftop area	Shared facilities	Living units
Inquiry		•	•								
Testing		•	•								
Acting											



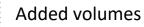
Future residents



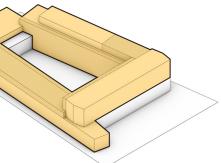




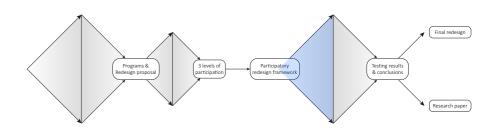
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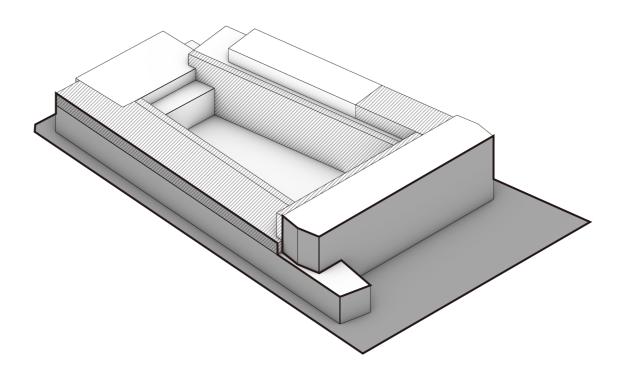


Future residents



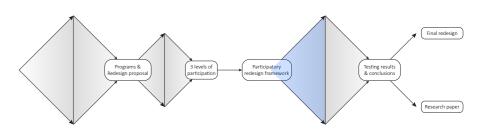


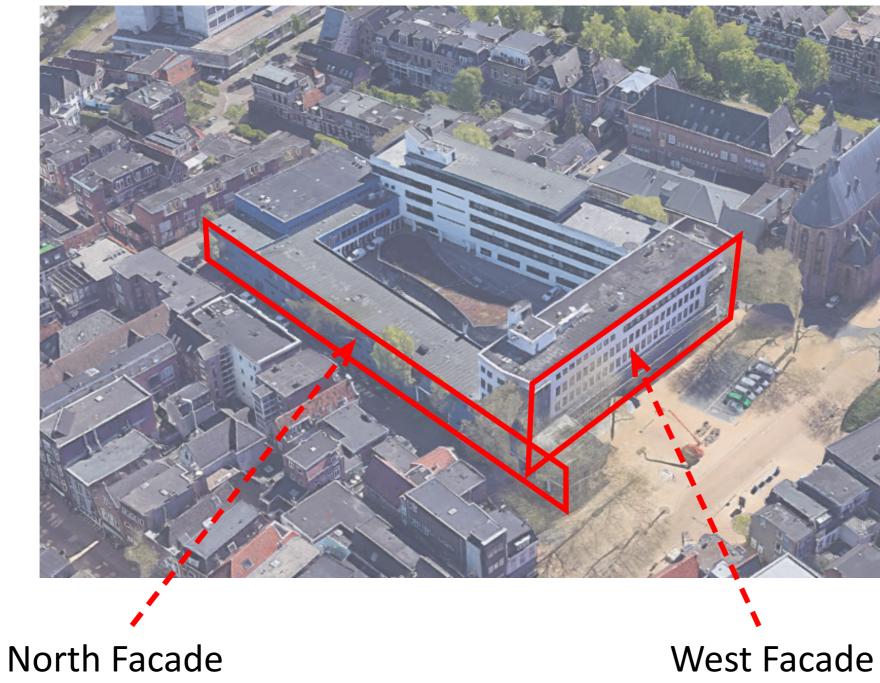




# **Sensitive Surface** Participatory facade redesign

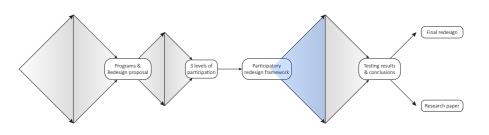
# FACADE REDESIGN FOCUS







# THE FRONT FACADE



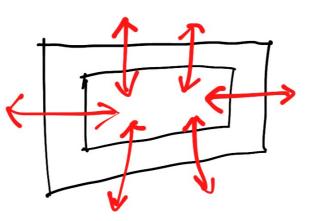




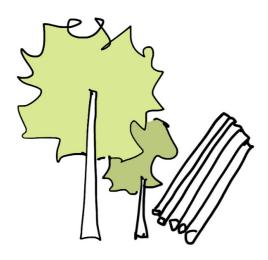
# FACADE REDESIGN STARTING POINTS



Characteristics



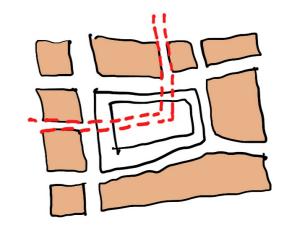
Openness

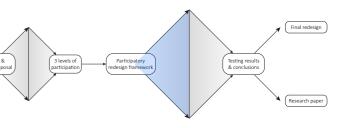


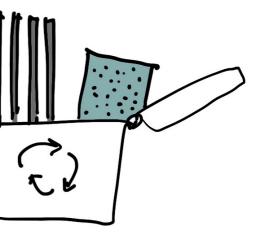
Nature



Function



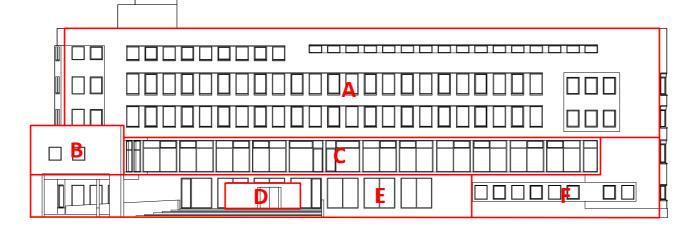


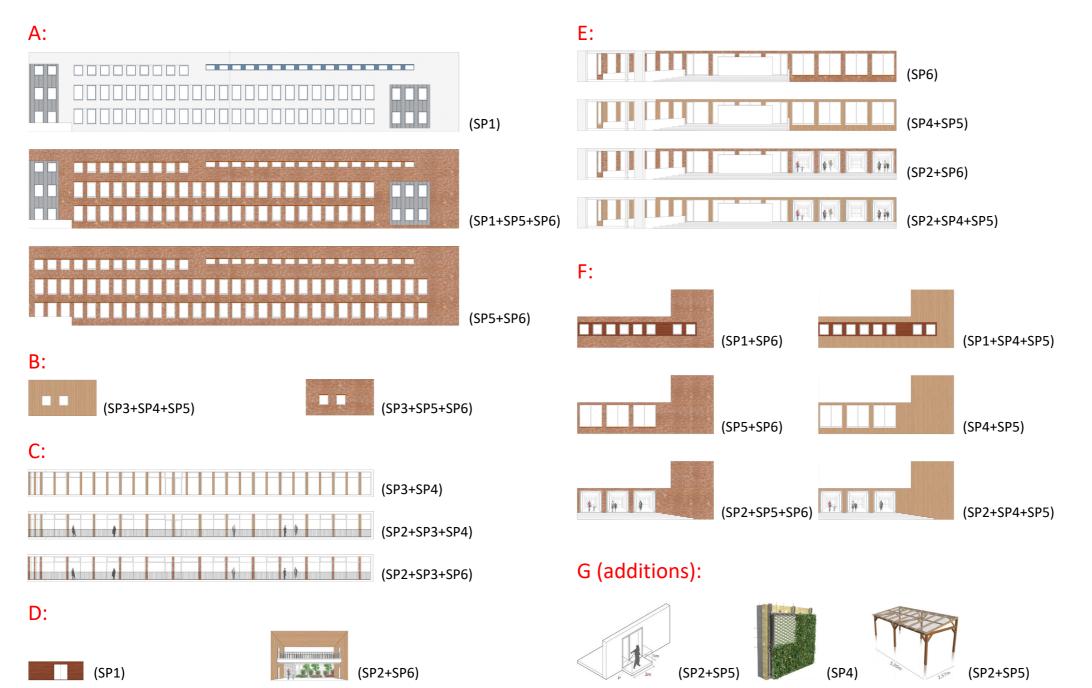


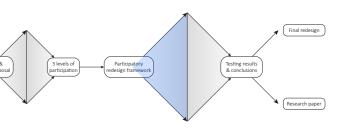
### Perception

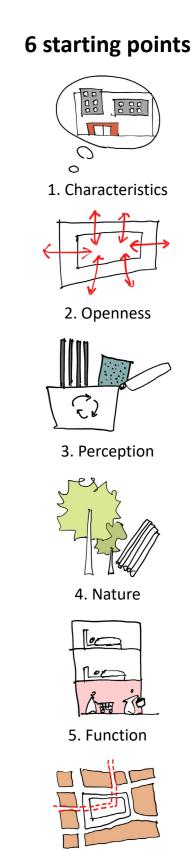
City

# **REDESIGN SCENARIOS**





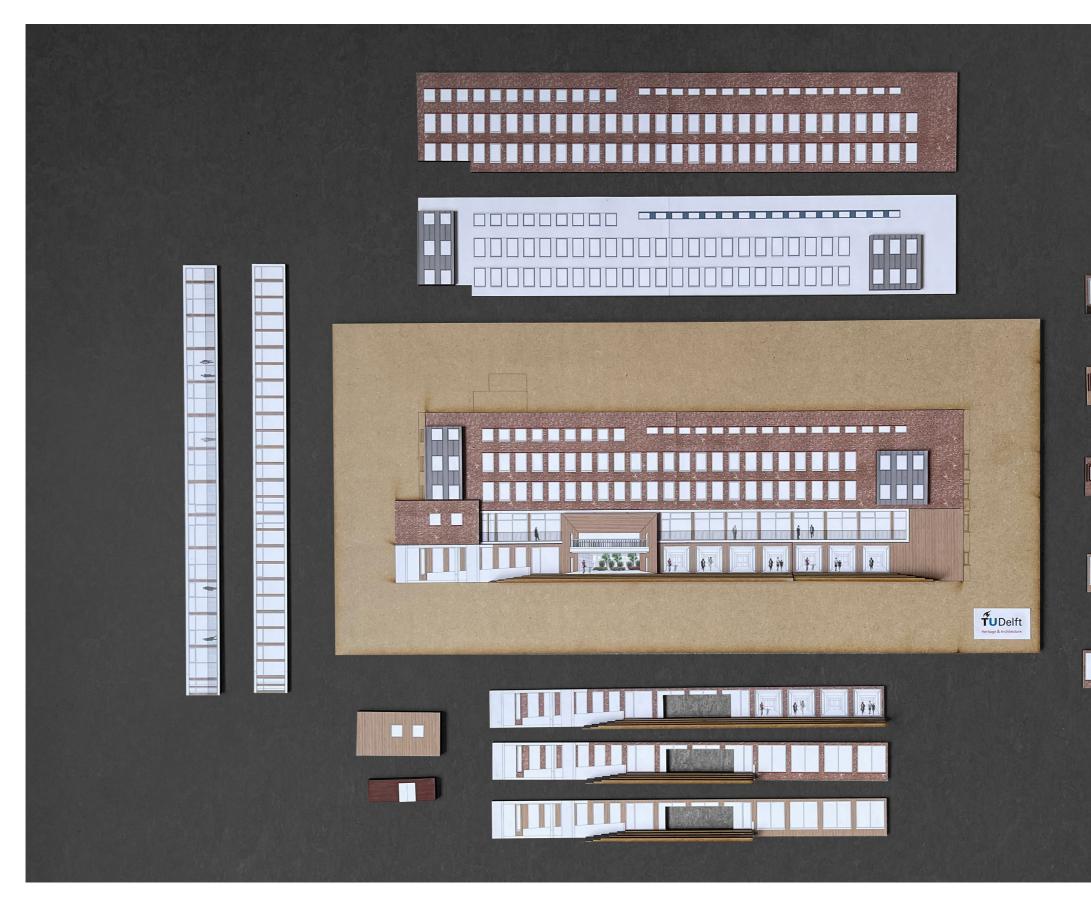


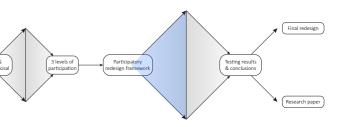


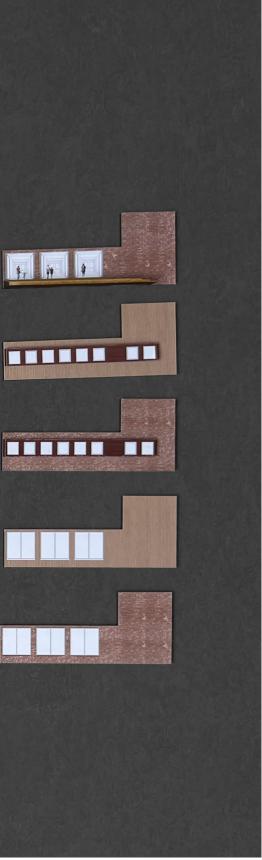
6. City

# 2,5D Model Gamification

More transparent & sense of participation

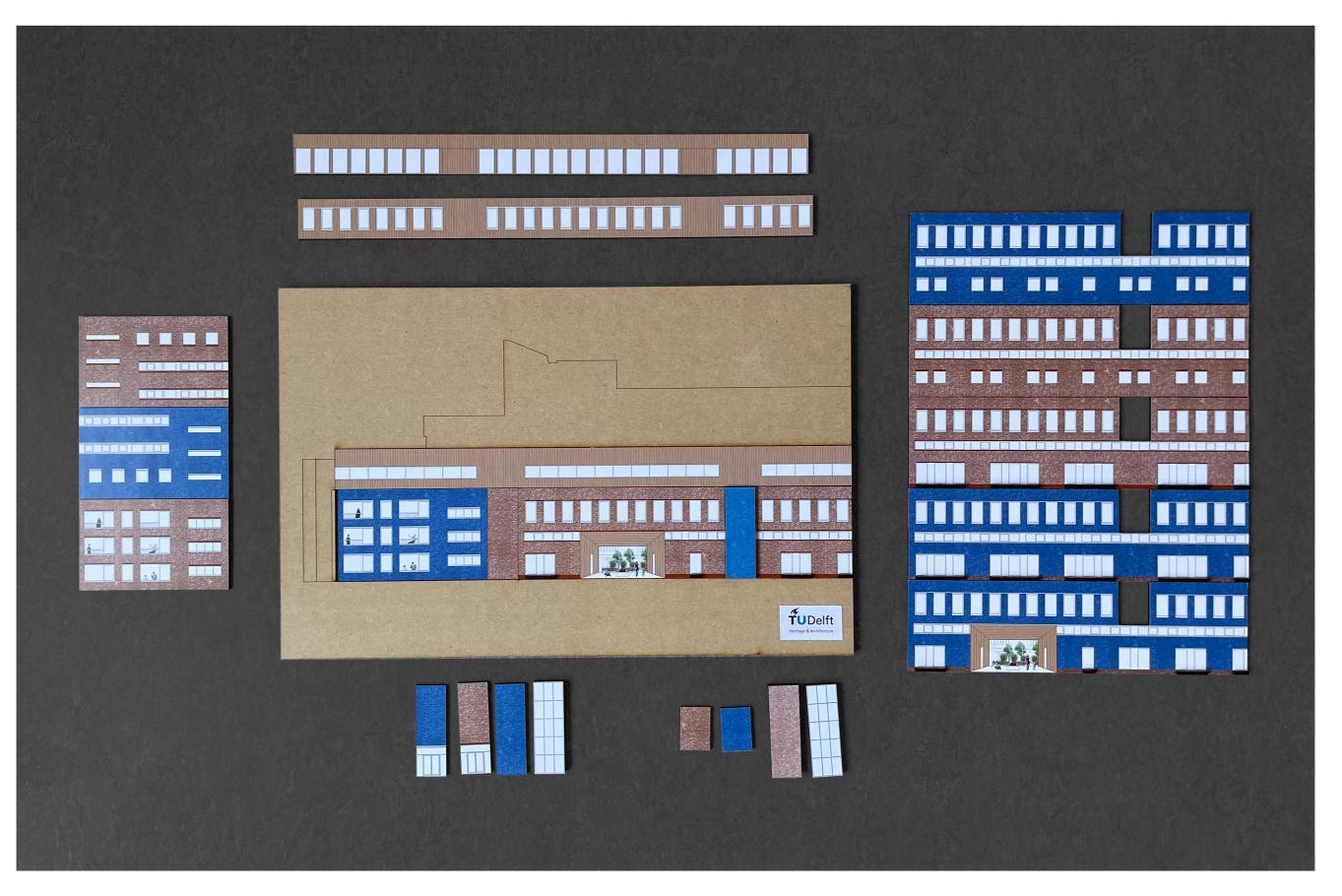


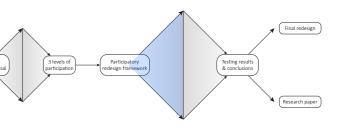




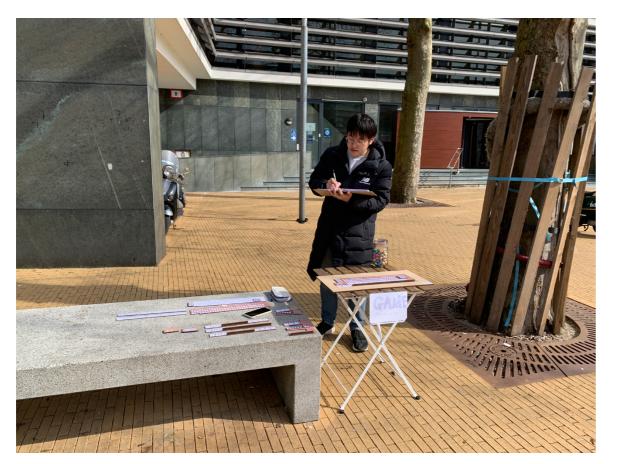
# 2,5D Model Gamification

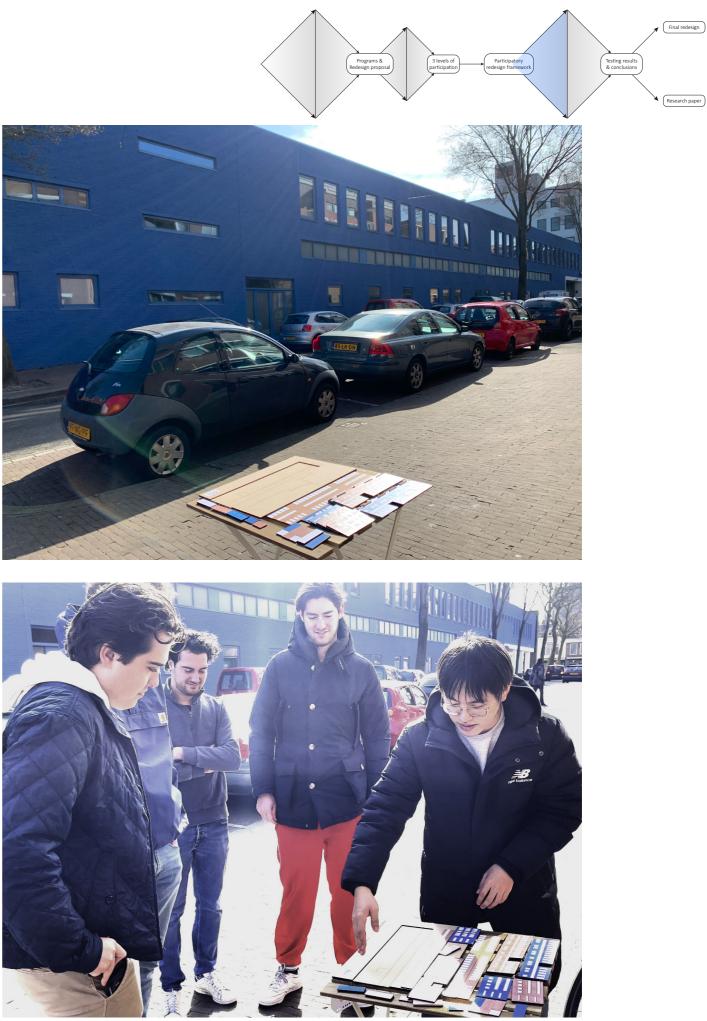
More transparent & sense of participation





# **TESTING PROCESS**





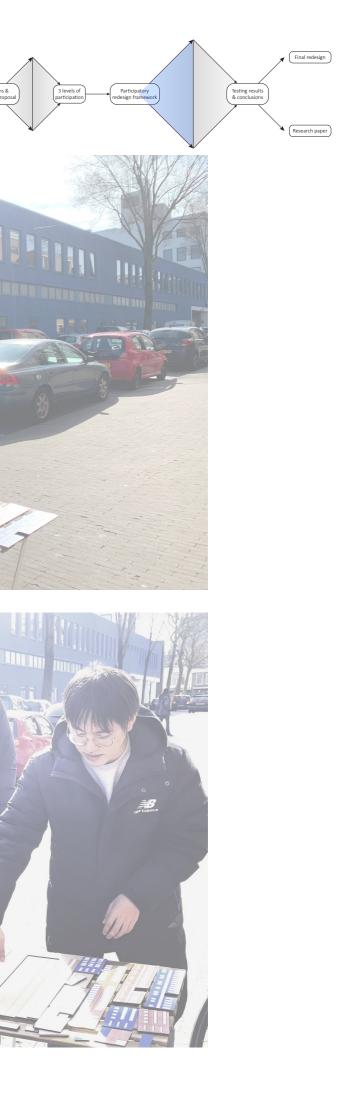


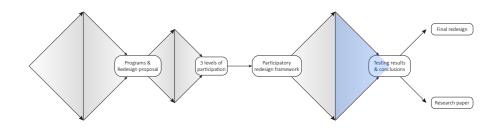


# **TESTING PROCESS**

Curious Spontaneous Intuitive Interactive Satisfied Proud

Photo by Baoky. K. Y. Huang

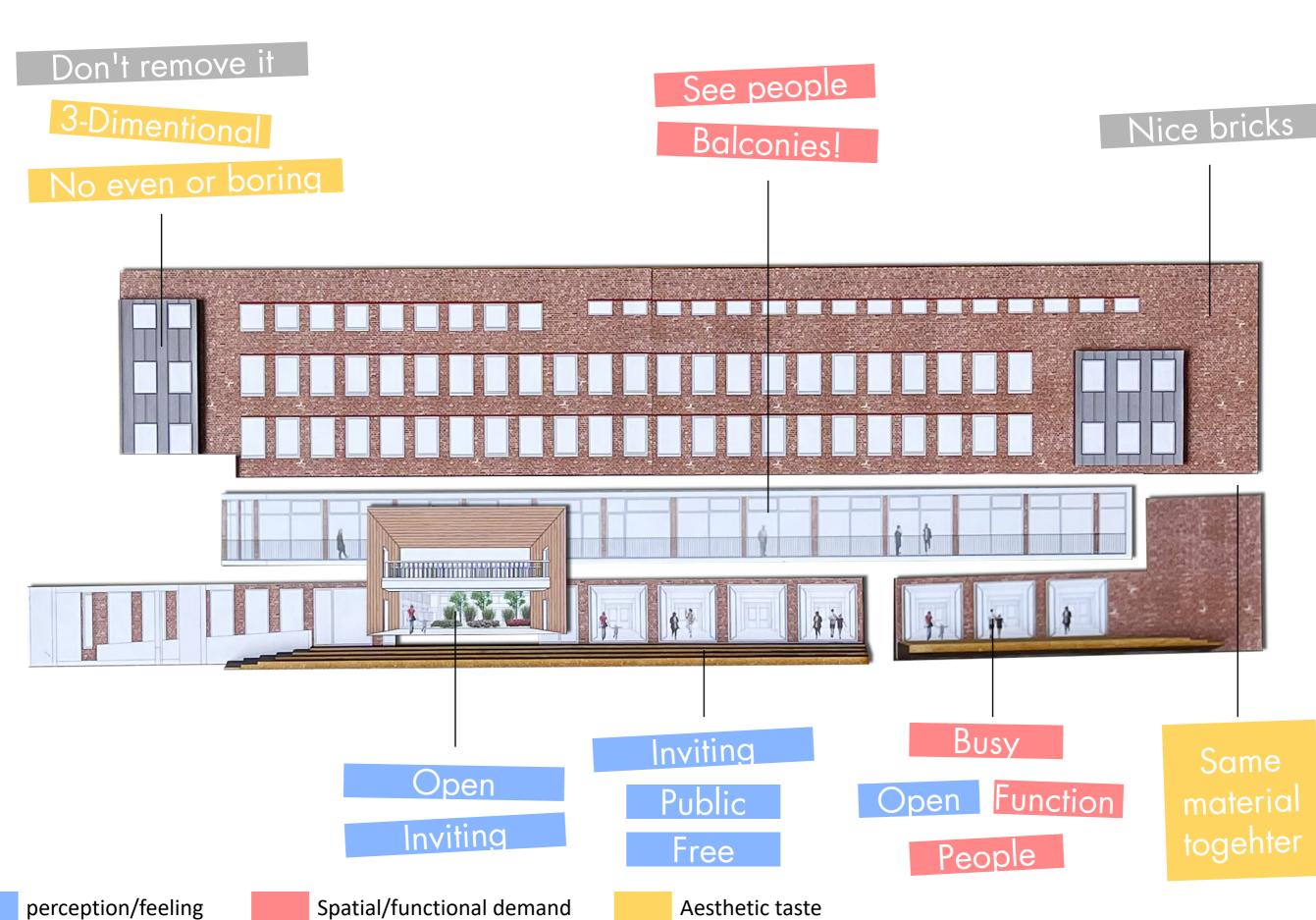


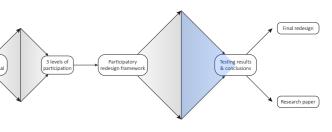


# Q4 & Q5:

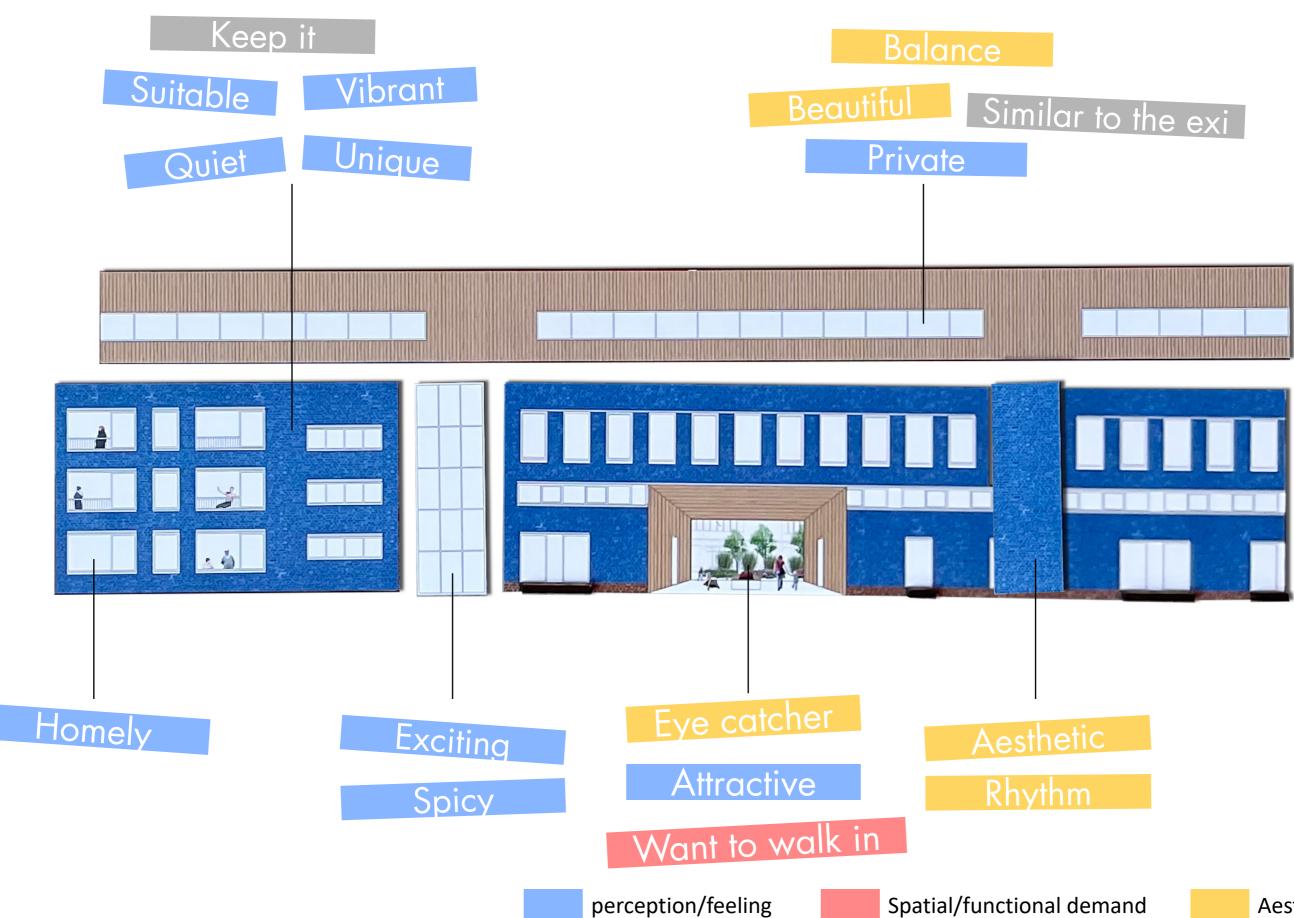
# What are the results of the experiment? How can they help the redesign?

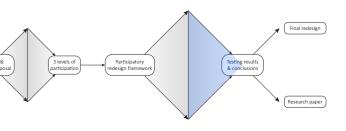
# **KEY FINDINGS: The Common Ground**





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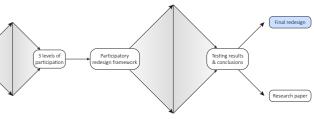




Aesthetic taste

# **CONNECT THE COMMUNITY AGAIN!**

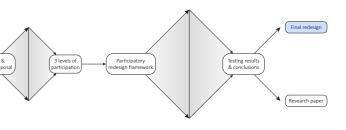
PD research



# Further design

# CONNECT THE COMMUNITY AGAIN!





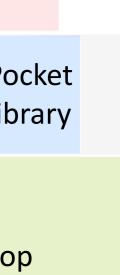
# .....

# Further design

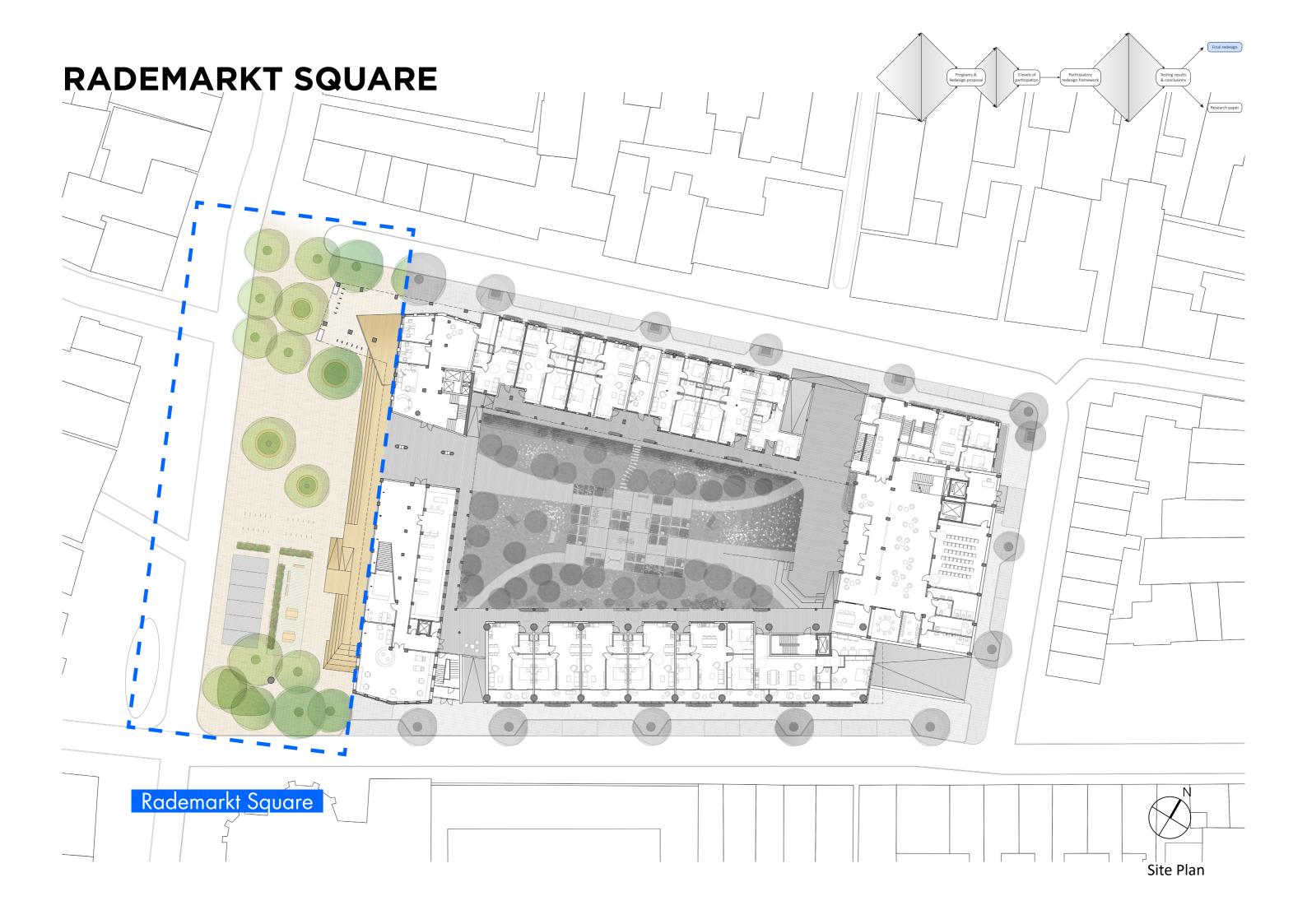


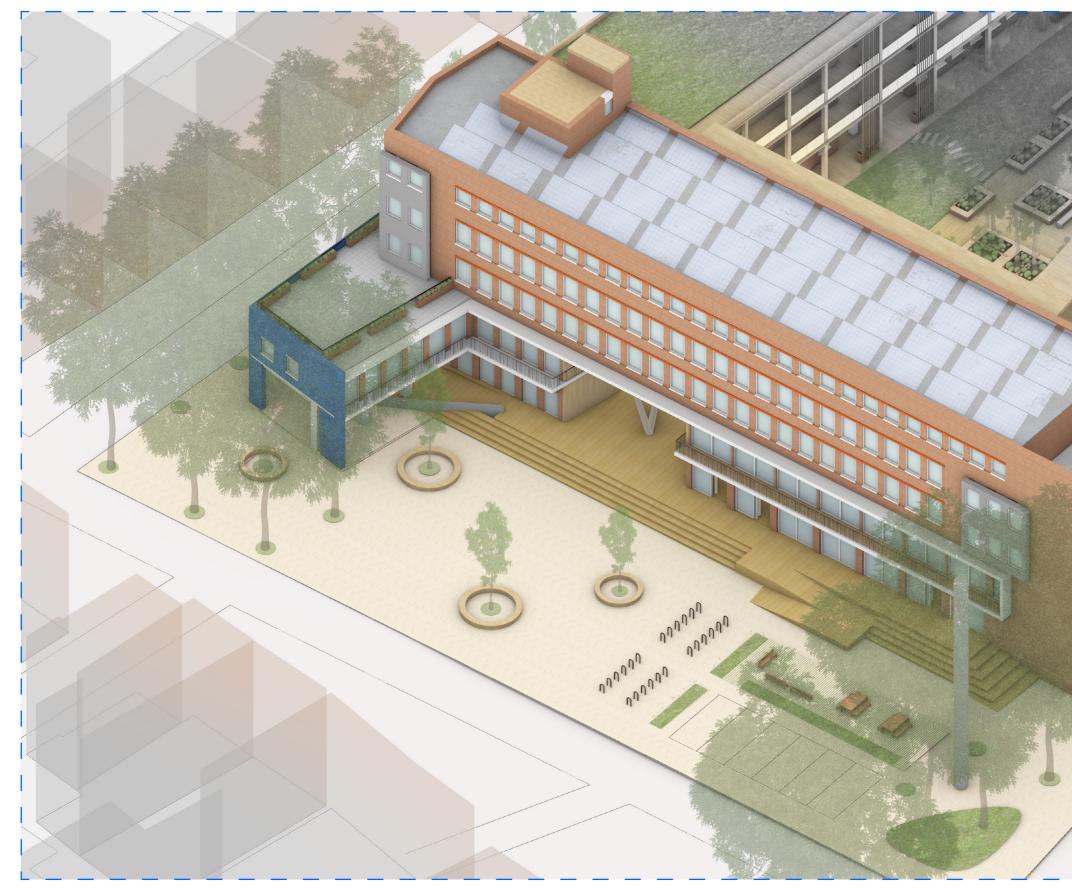
	Gues	st hotel	
Shared sports		Apartment	
	Apartment	lib	
Apartment		Gym, shop	
Office, mail, lobby		Supermarket, barber's, sho	
Parking, storage, technique			

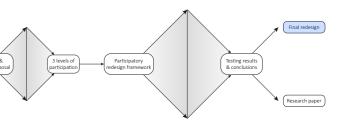
Program distribution



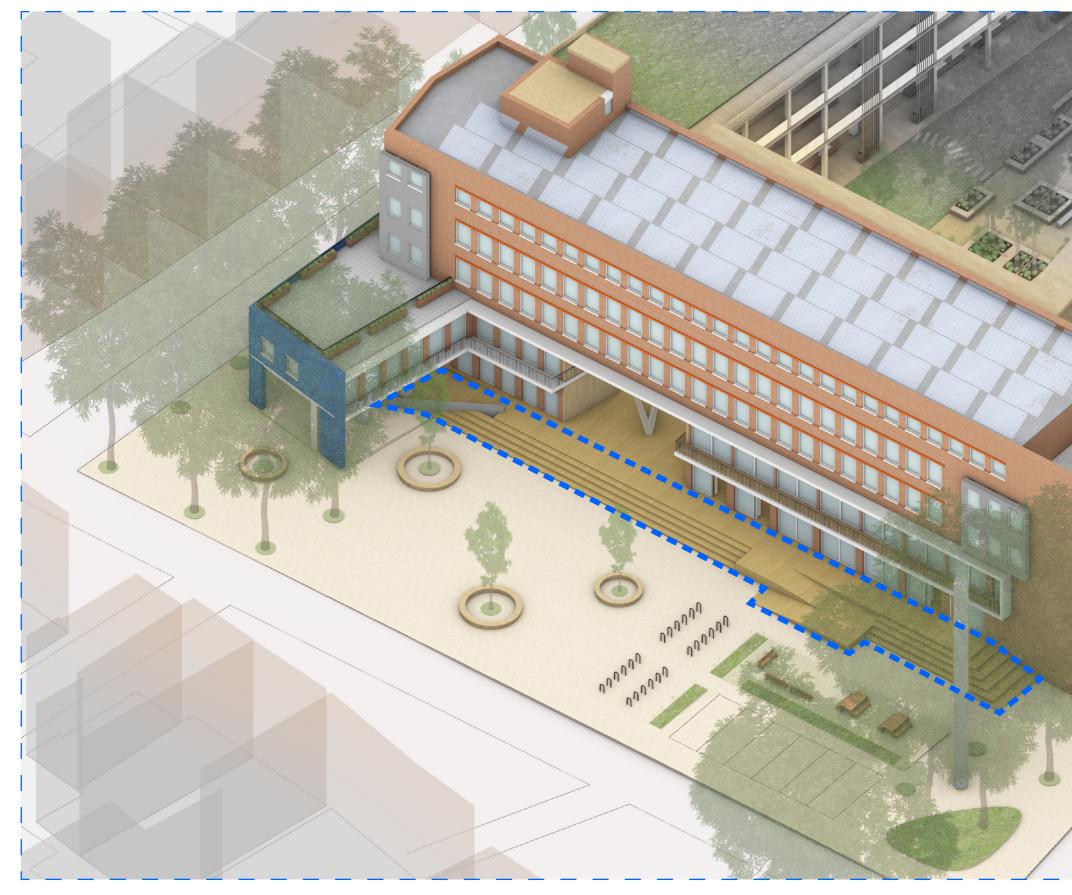
# Front elevation

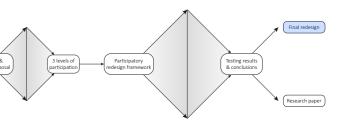




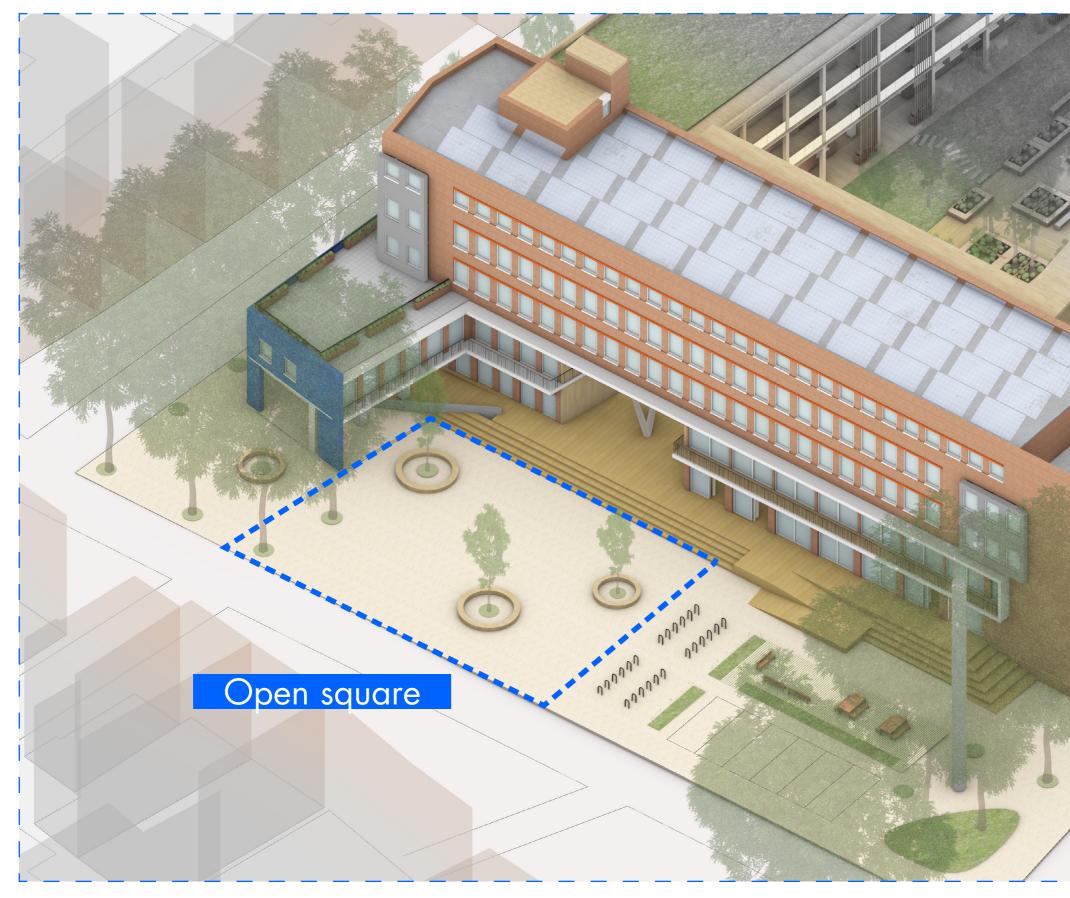


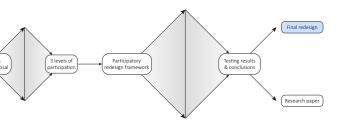




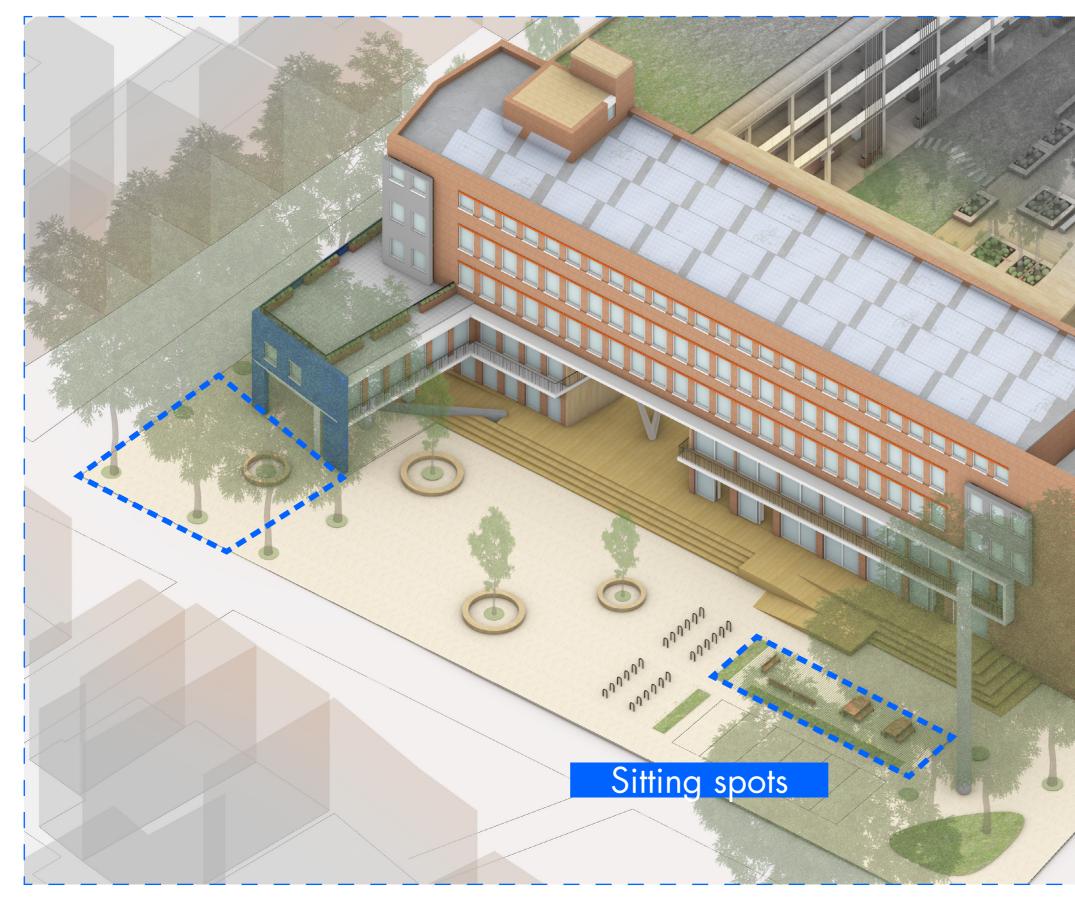


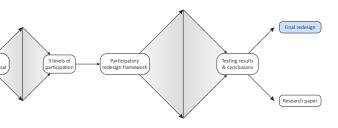




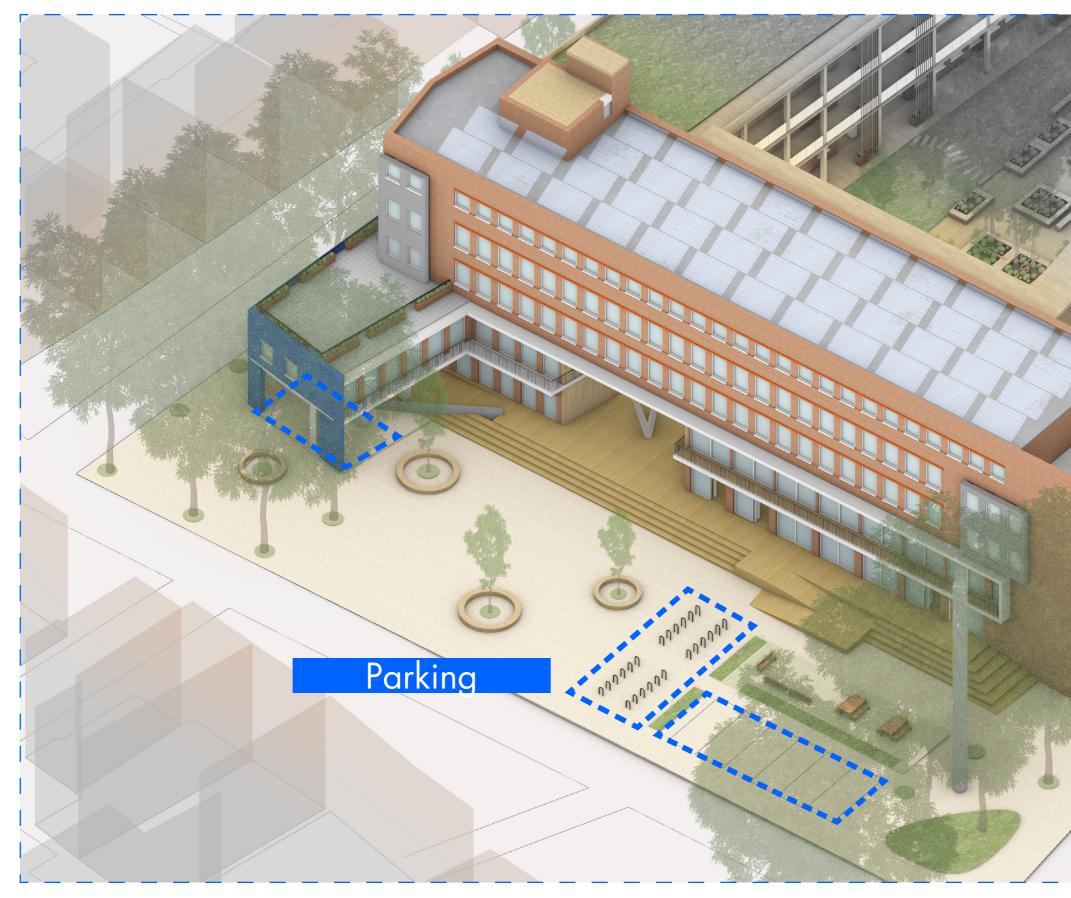


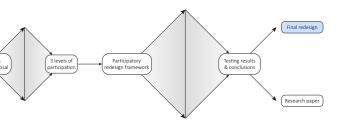






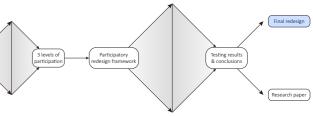


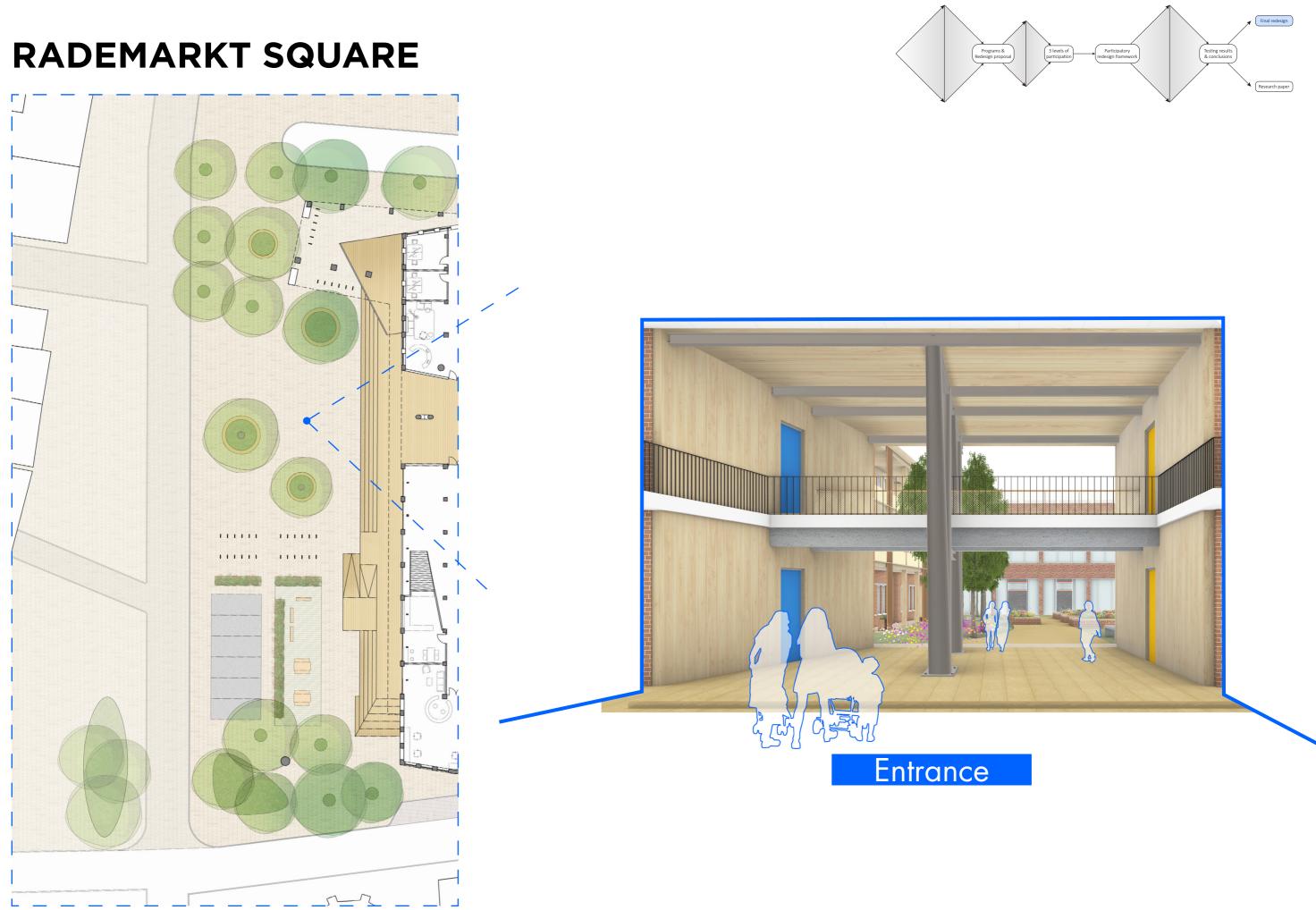


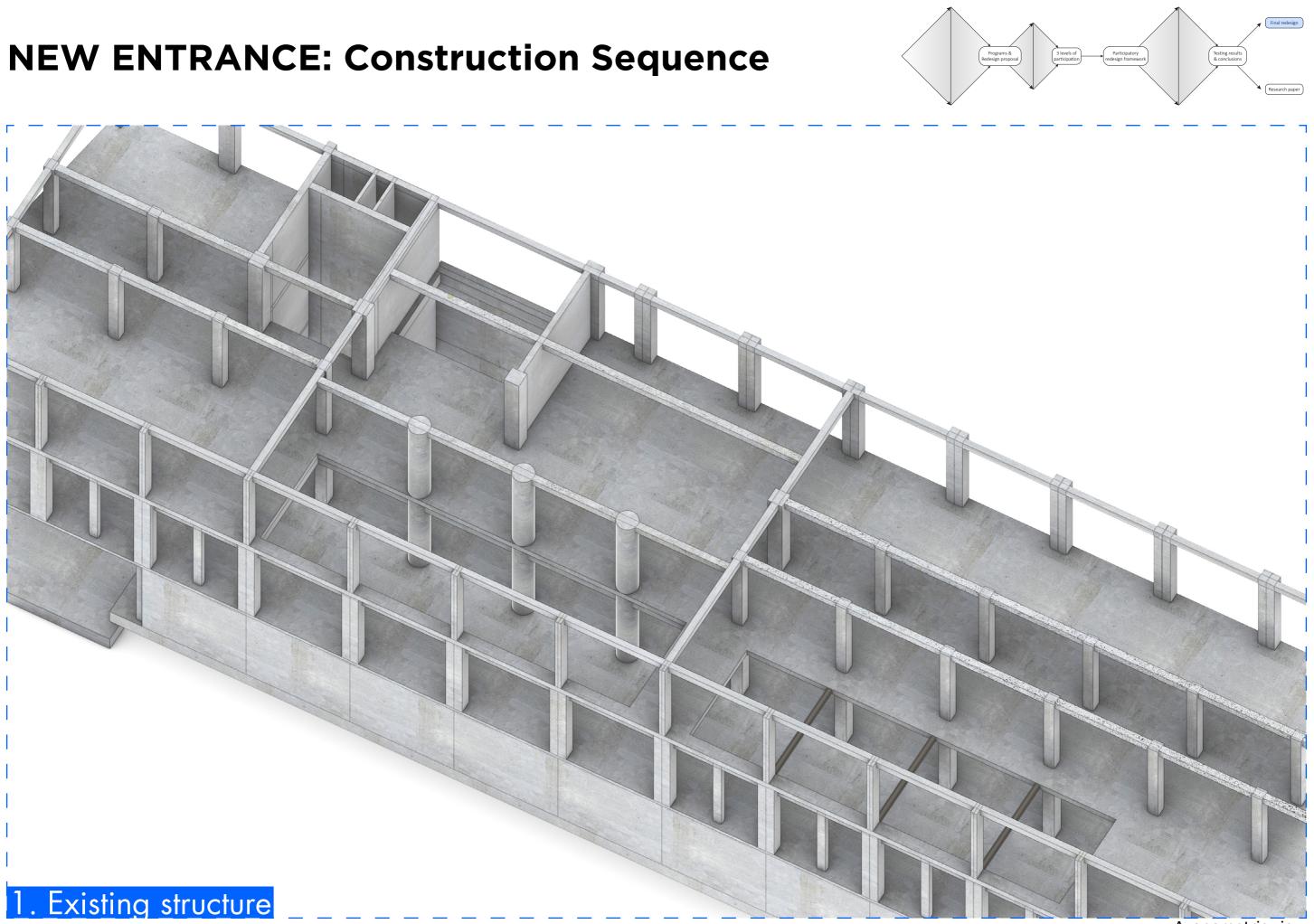




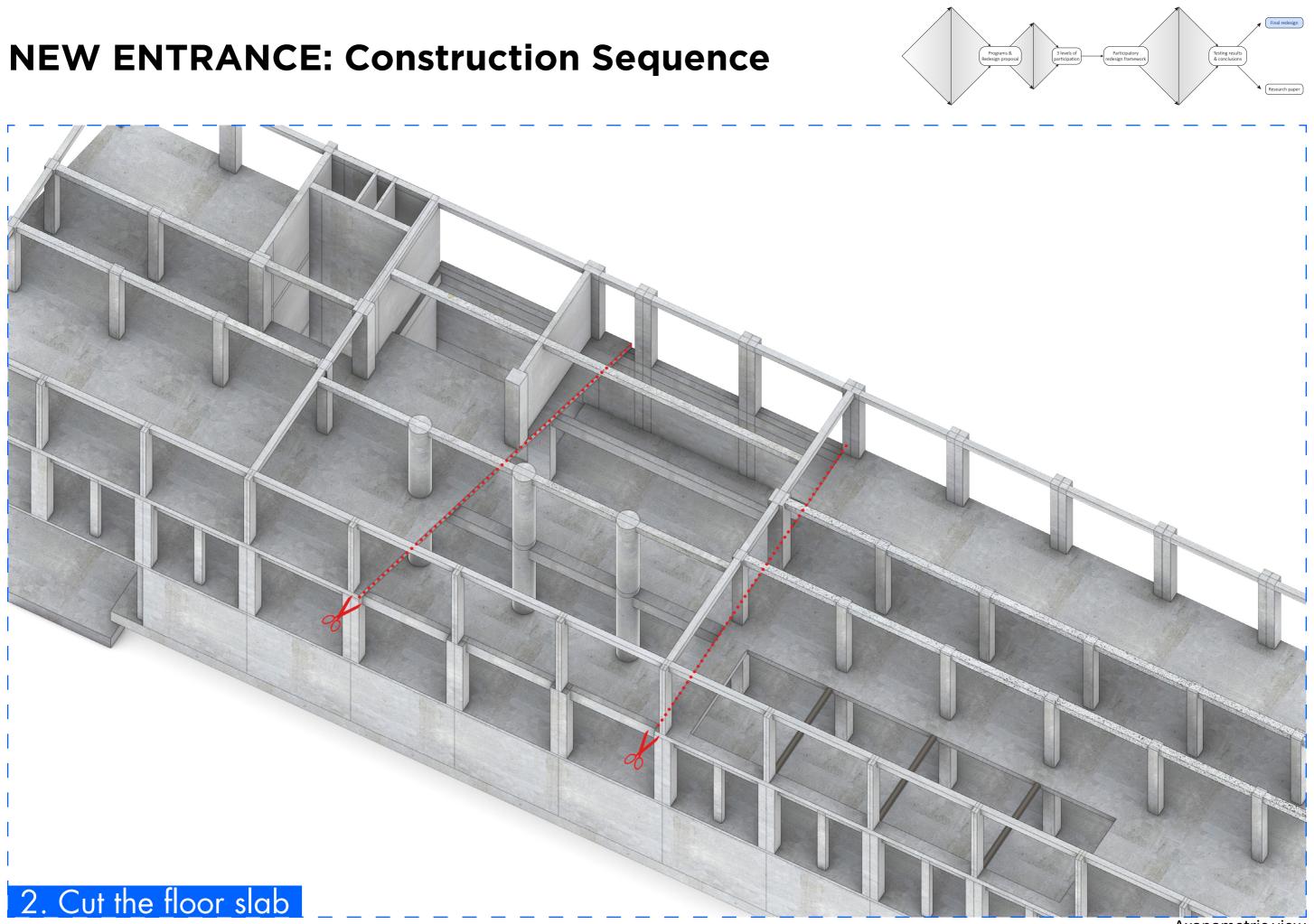




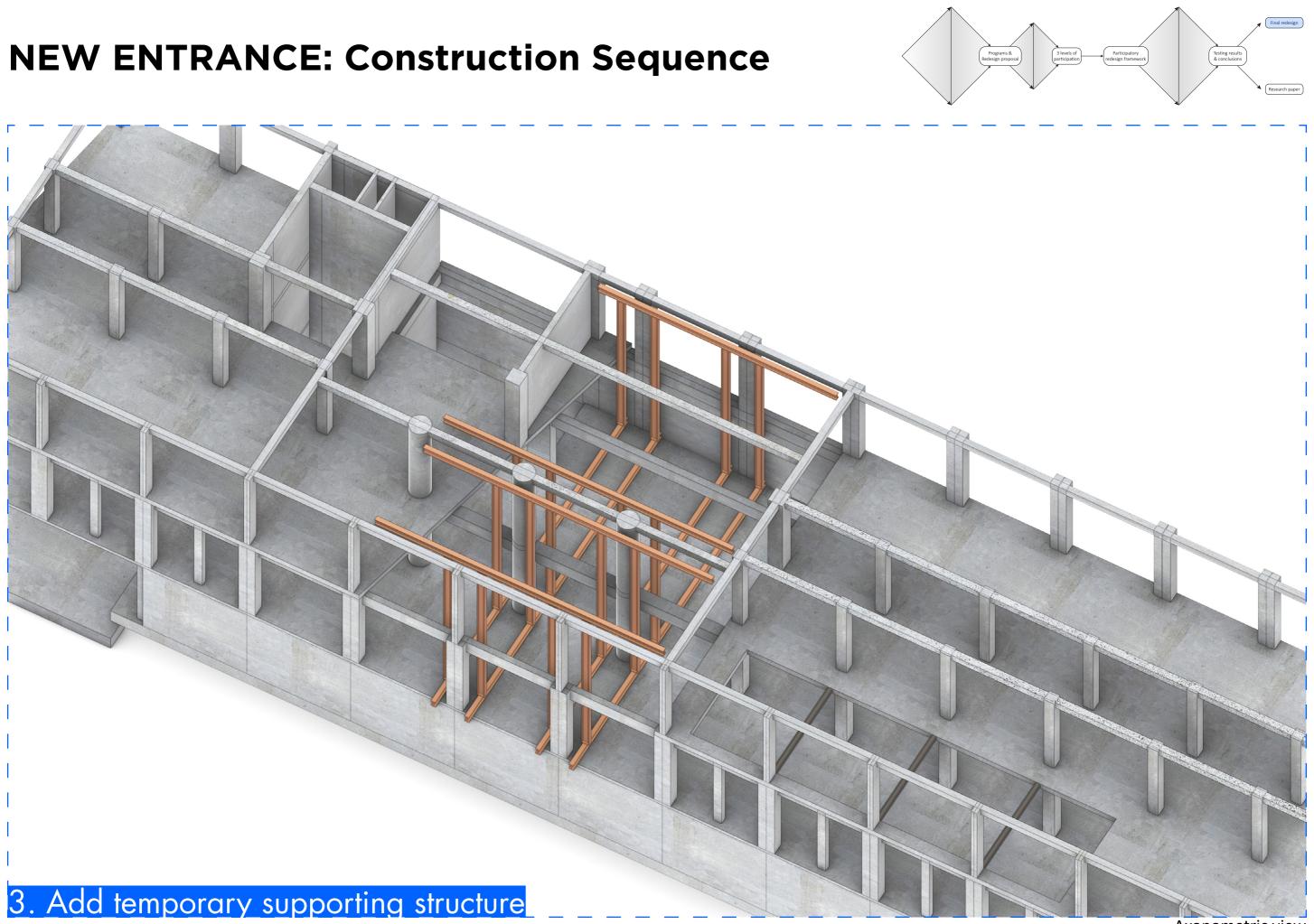




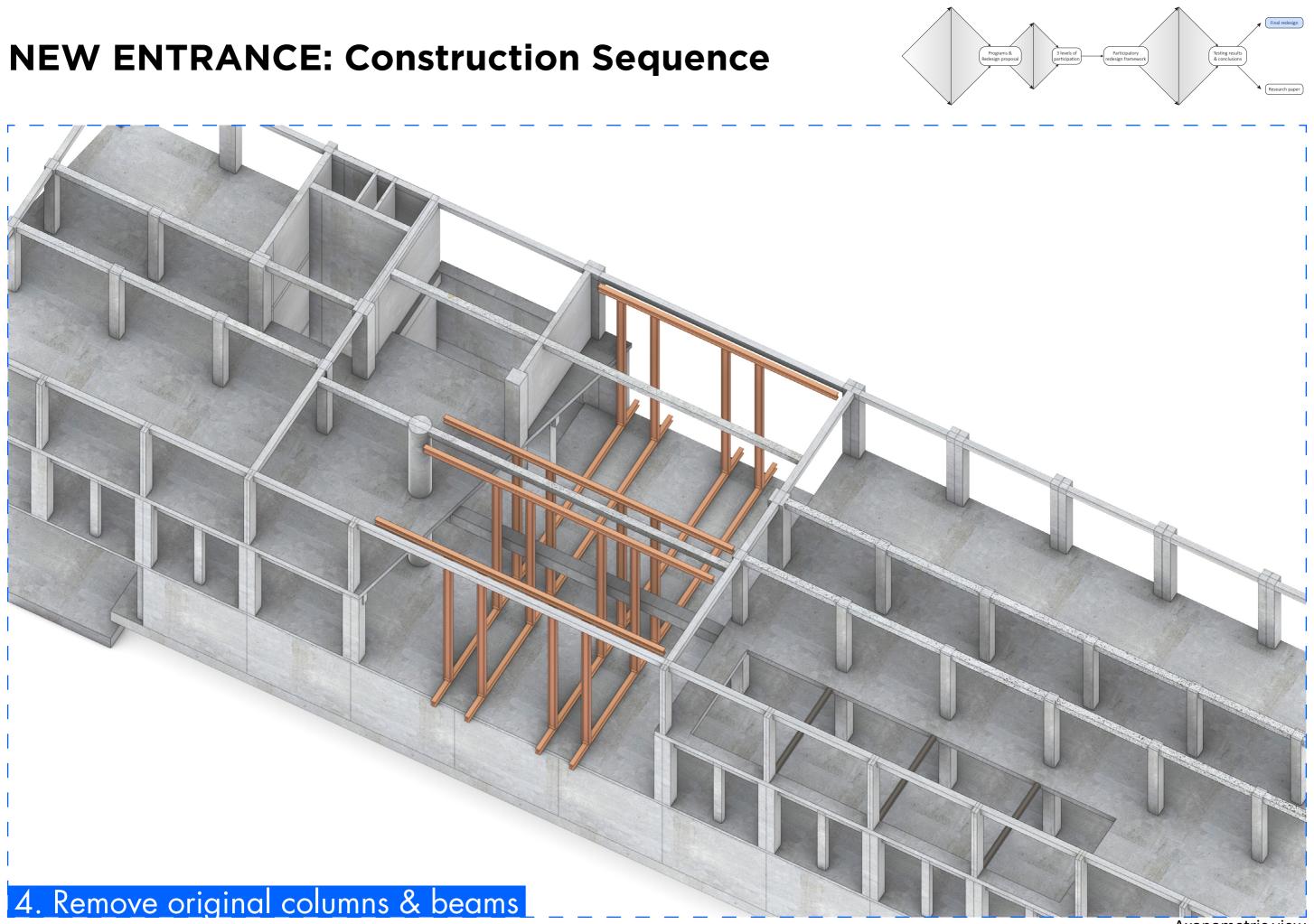
Axonometric view



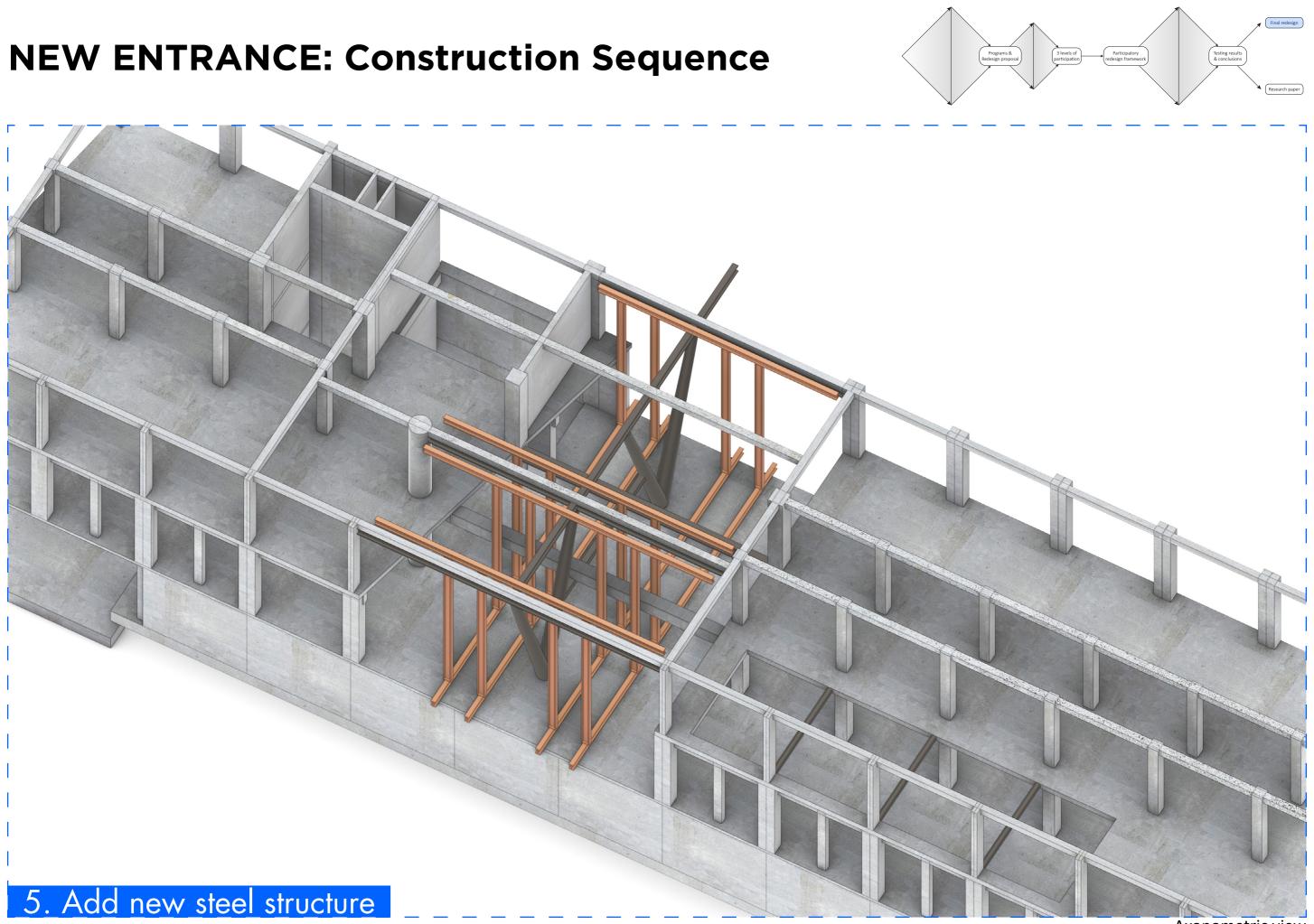
Axonometric view



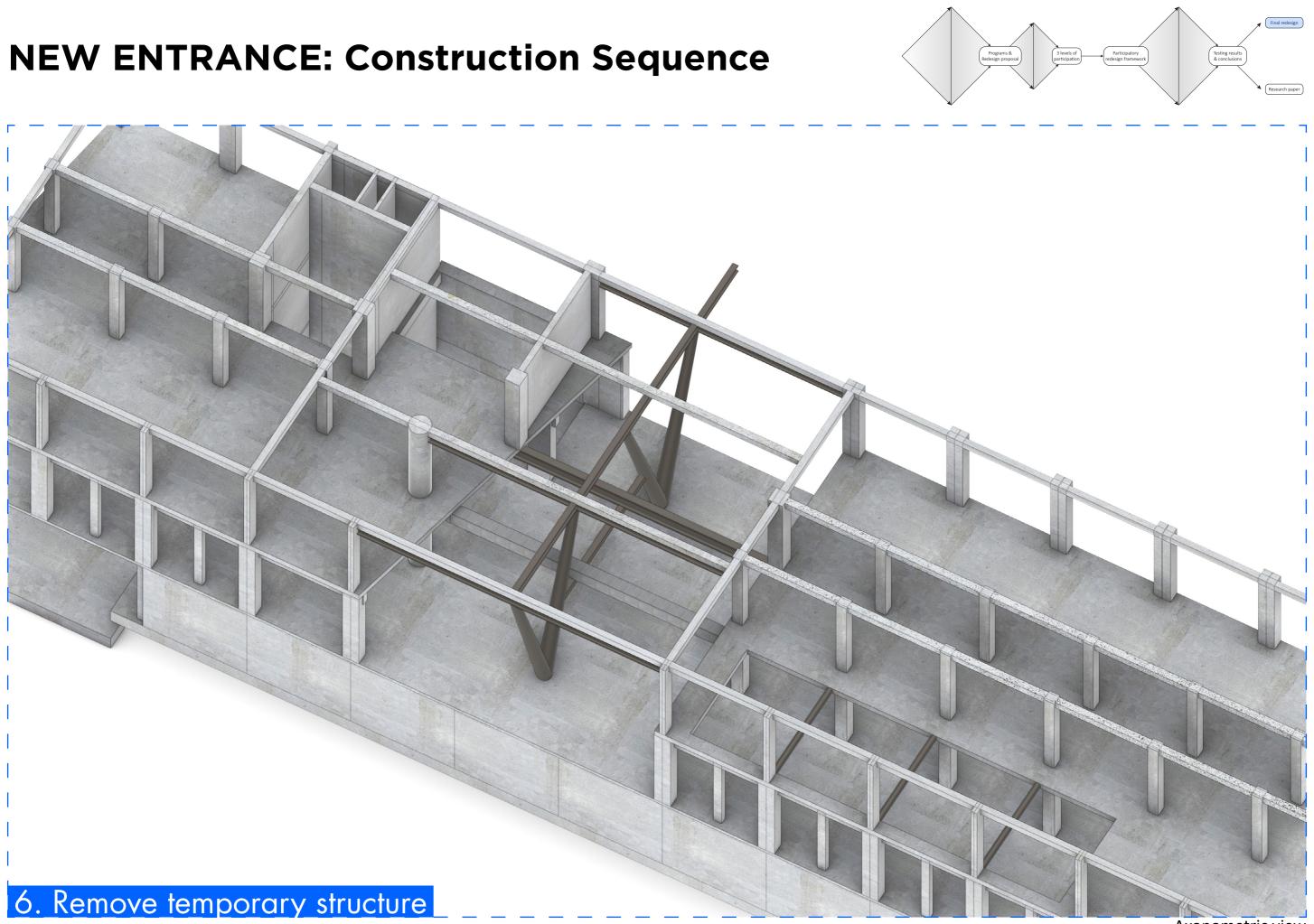
Axonometric view



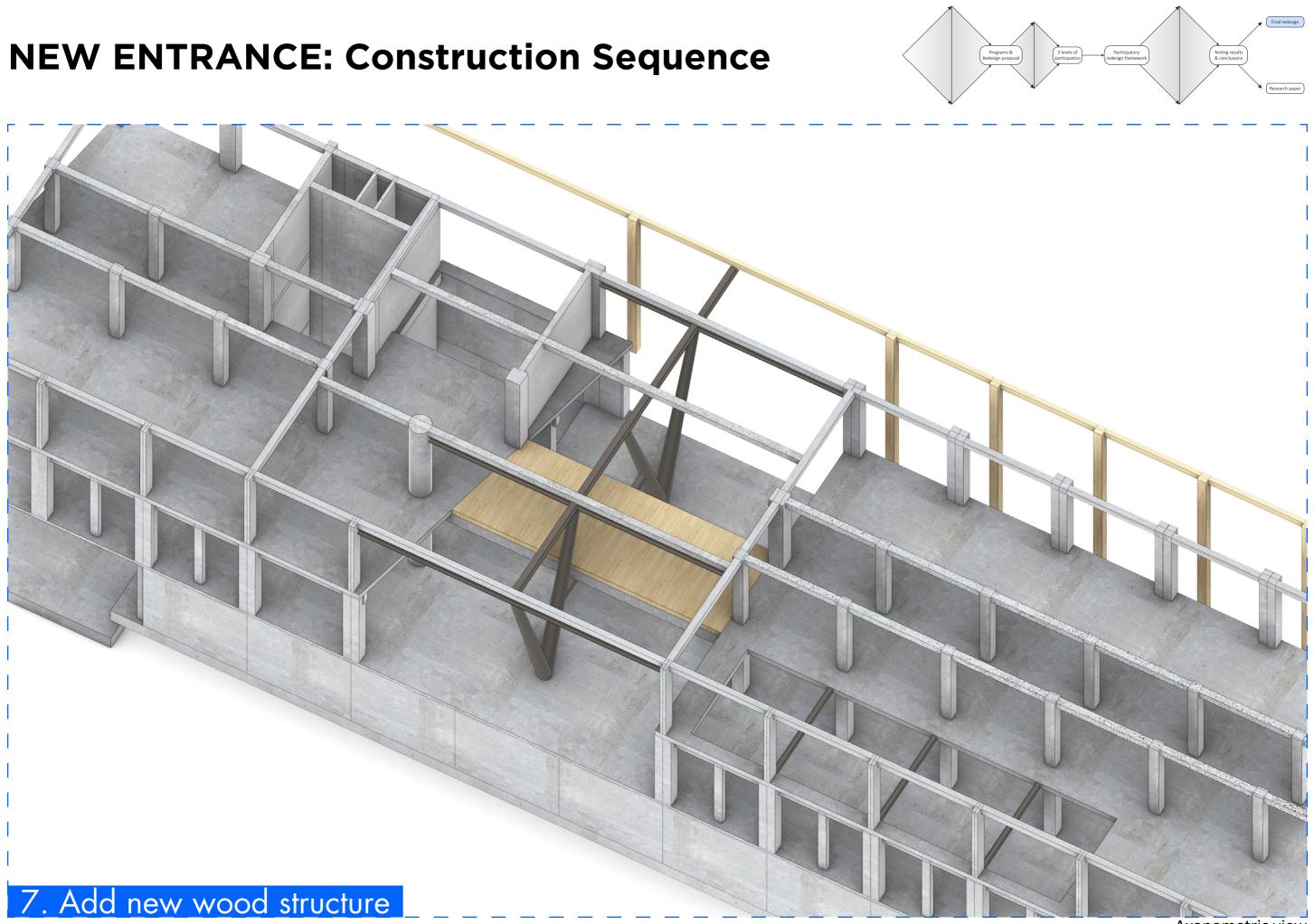
Axonometric view



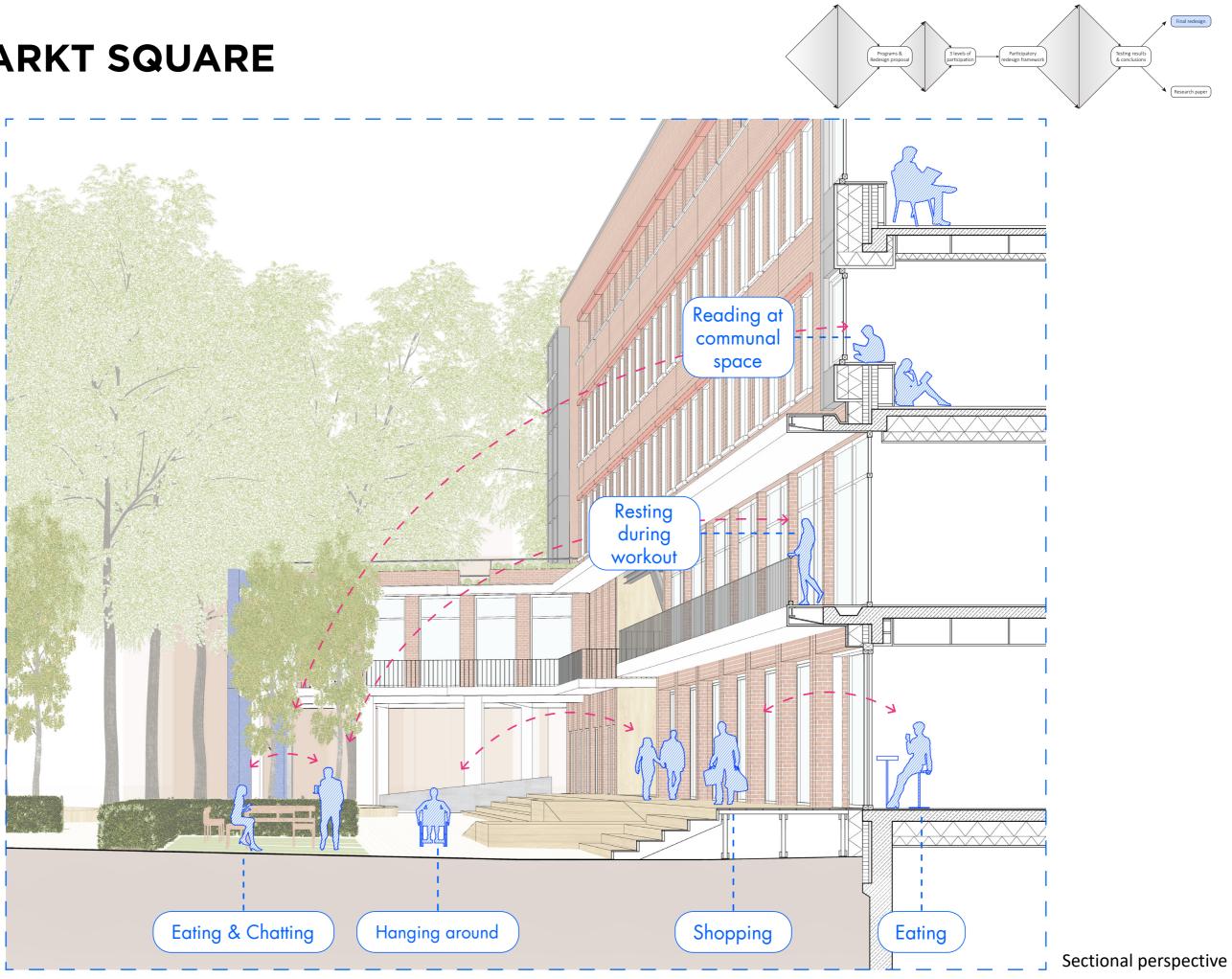
Axonometric view

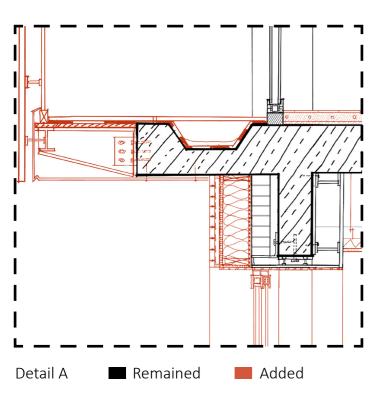


Axonometric view



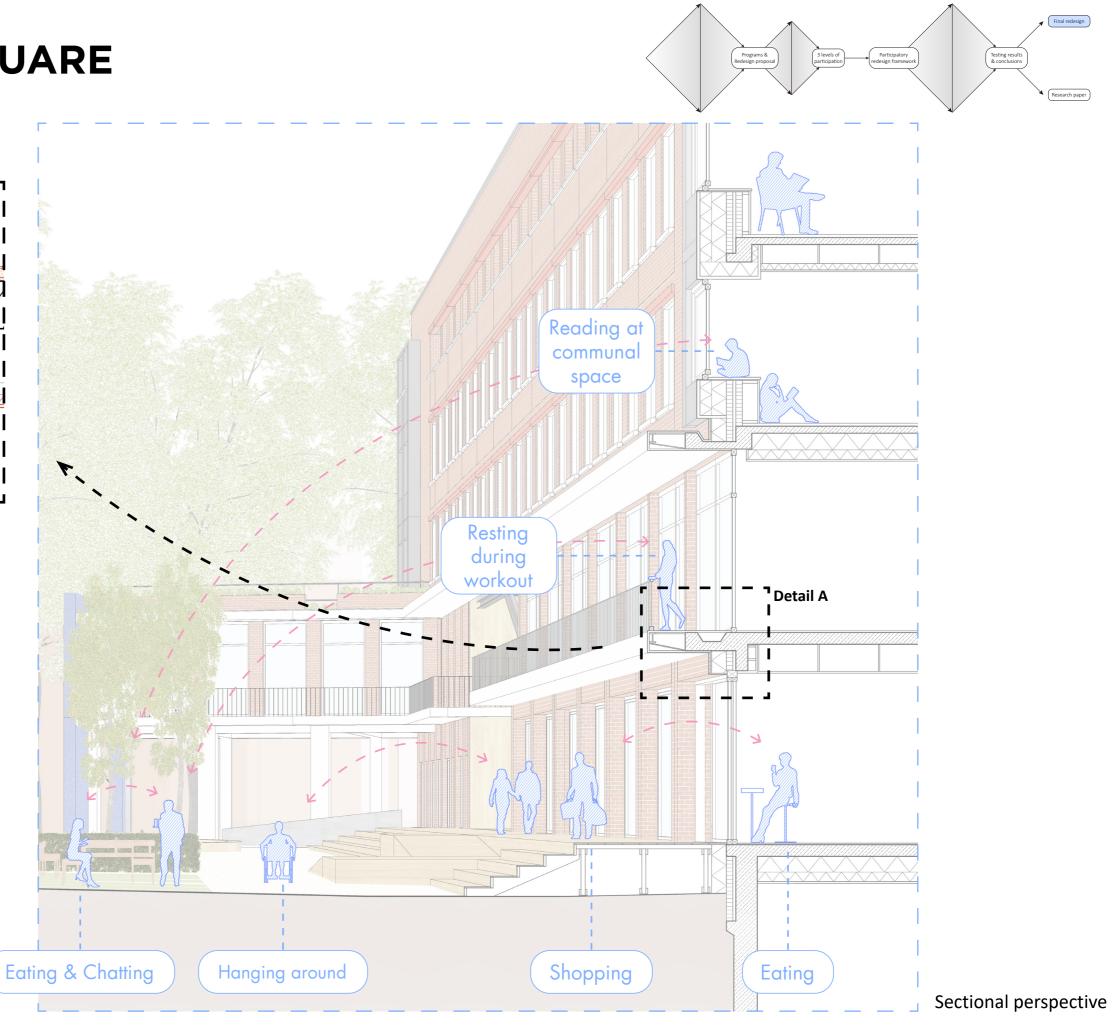
Axonometric view

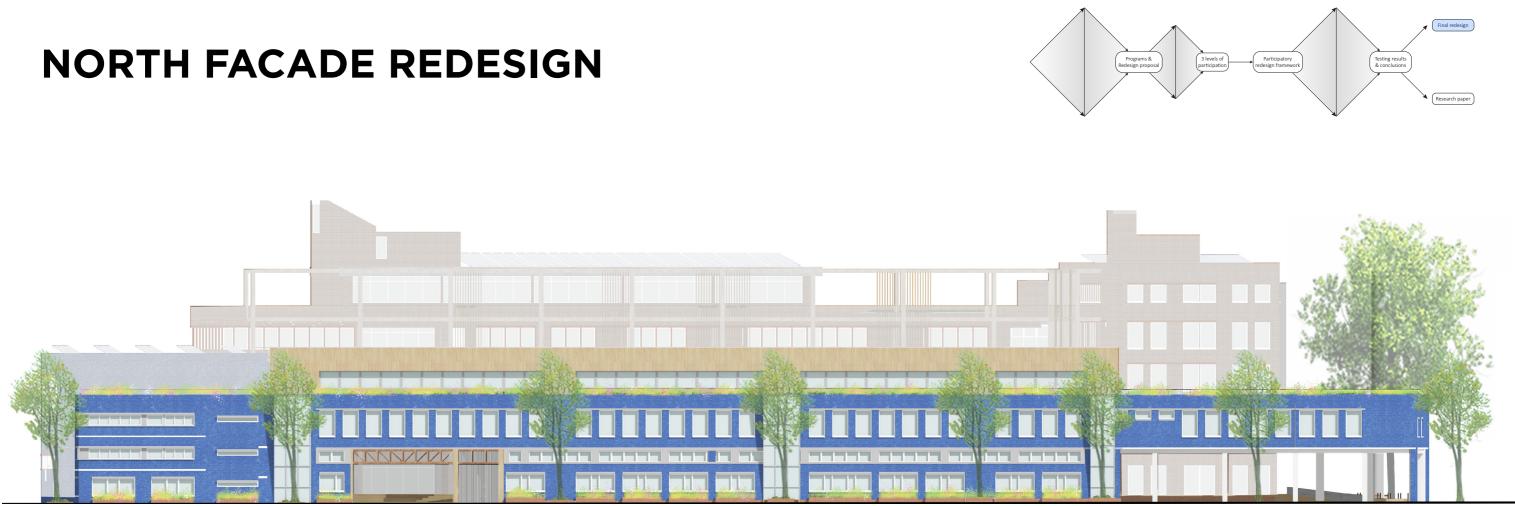


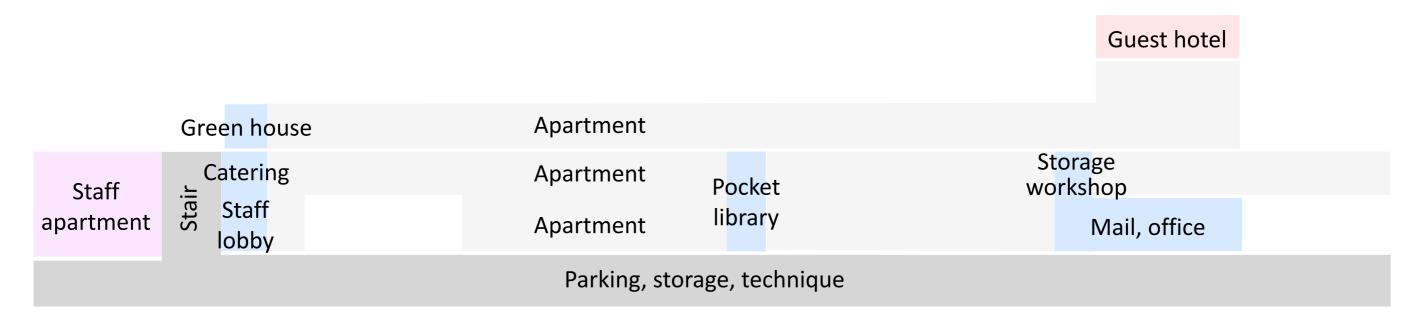


## Wall Construction:

28mm natural clay brick slips with prespaced 10mm horizontal joints 15mm backing tray/rail damp-open sealant layer 12.5mm fibre cement board 250mm EPS thermal insulation 12mm OSB vapour barrier 100mm existing brick 50mm cavity 200mm existing reinforced concrete 150mm existing installation & batten existing serpentino board



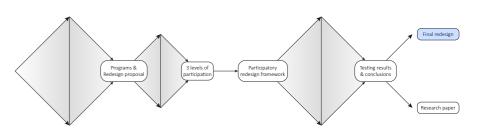




North elevation

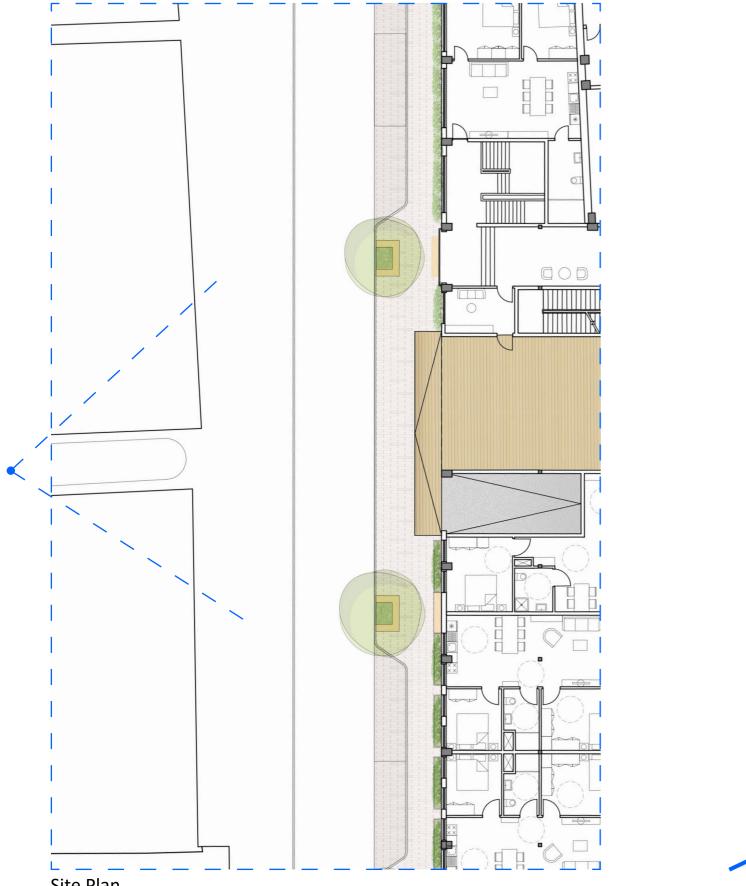
Program distribution

# **KOSTERSGANG STREET**



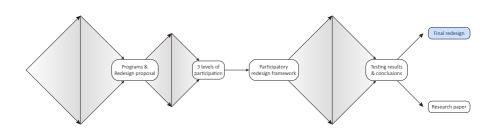


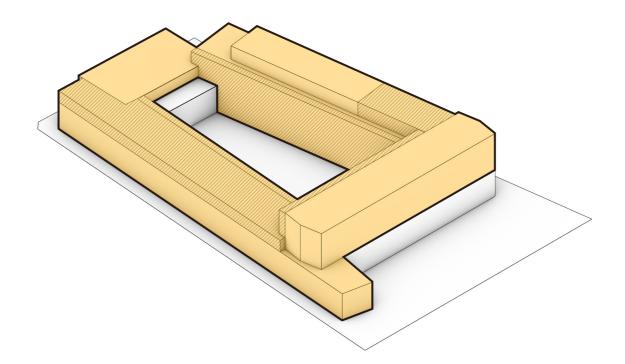
# **KOSTERSGANG STREET**



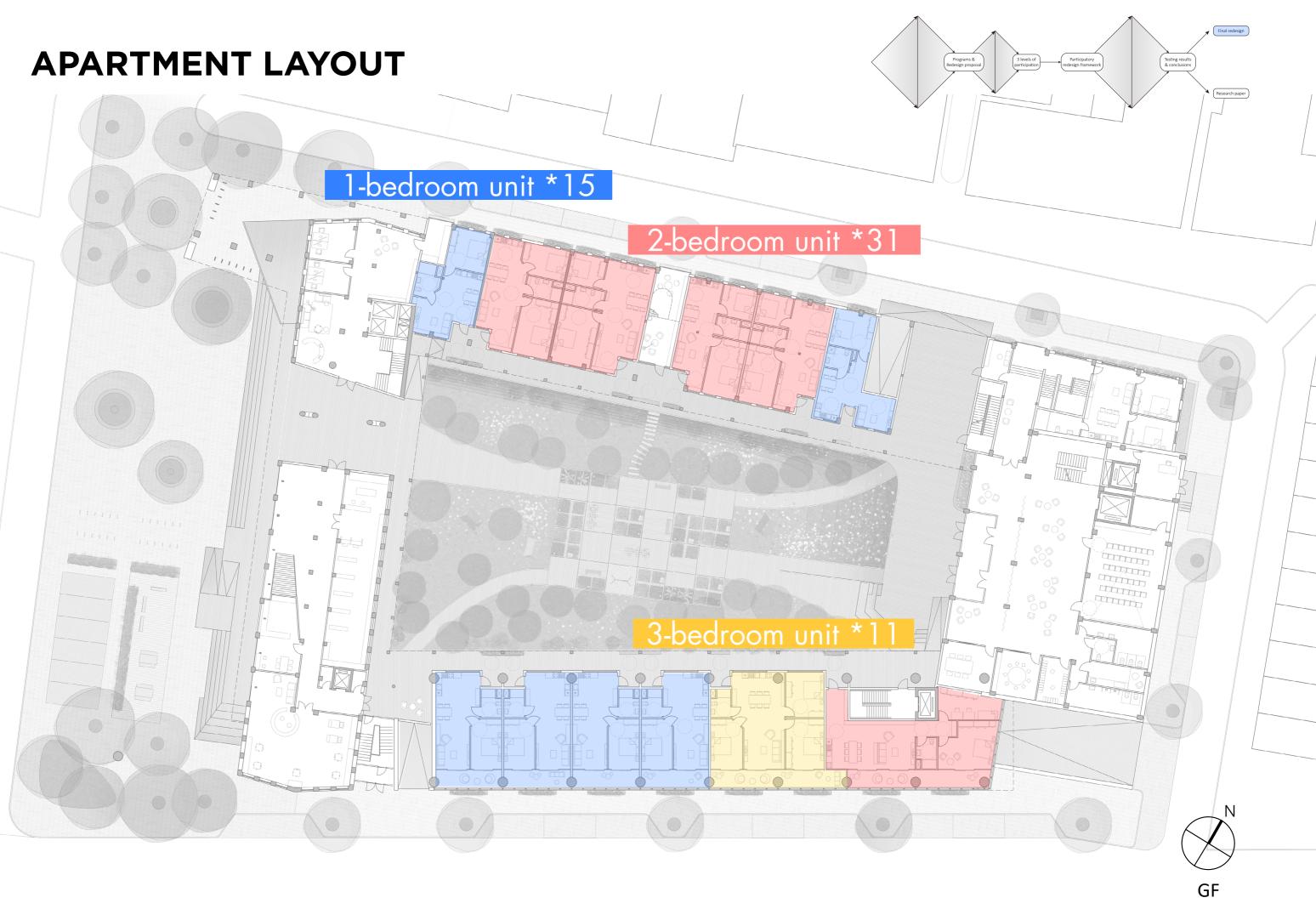
Historic Lane

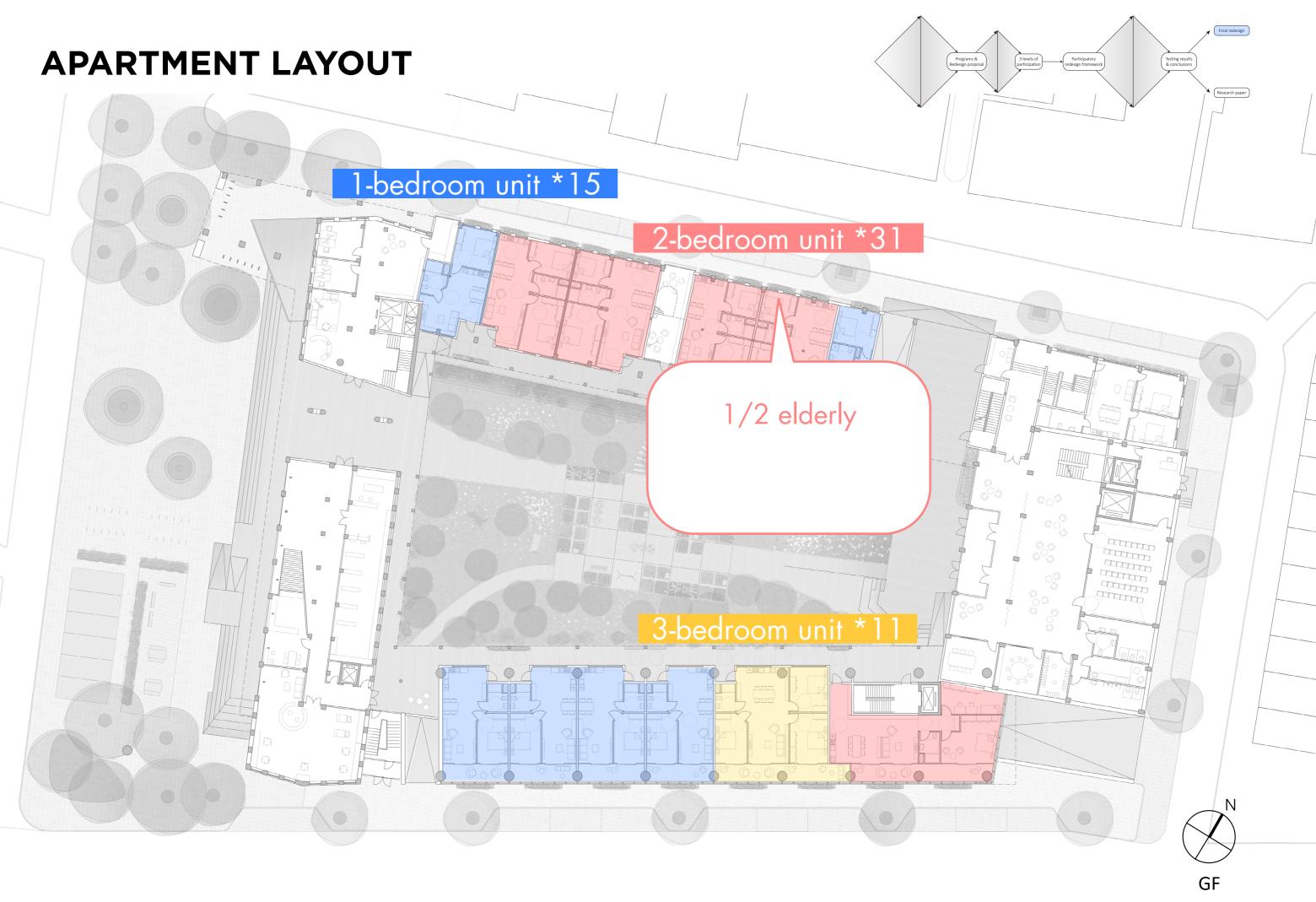


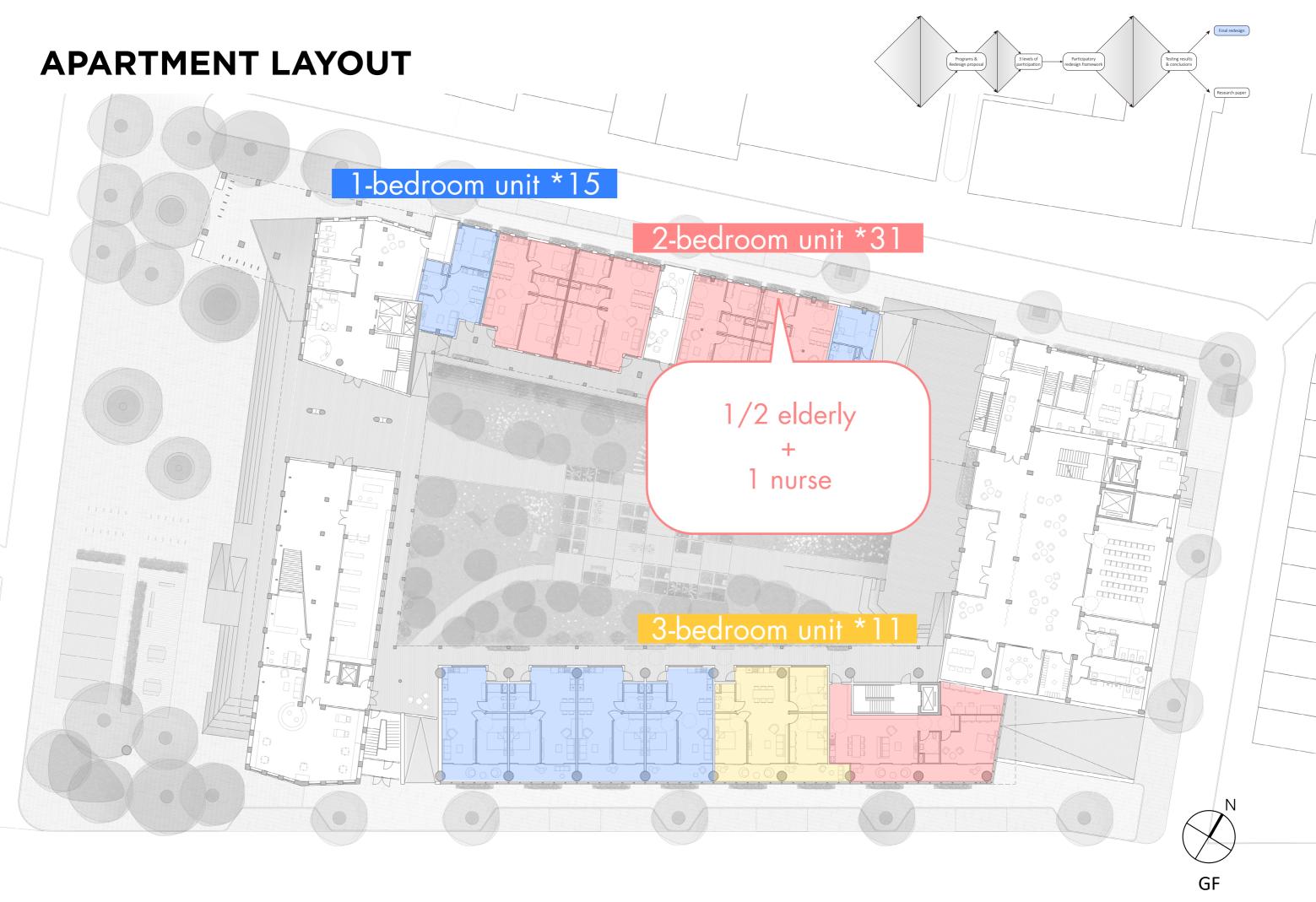


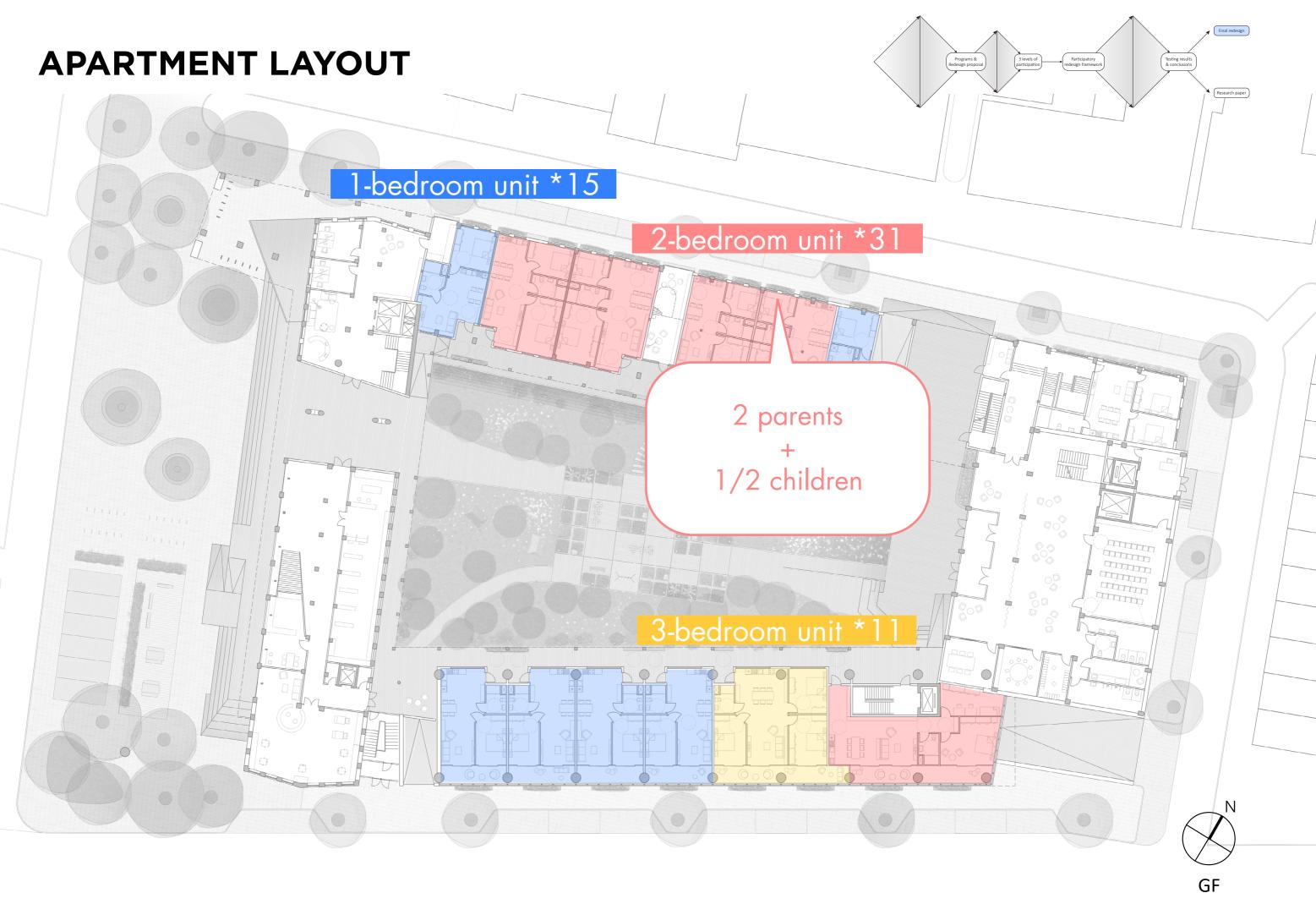


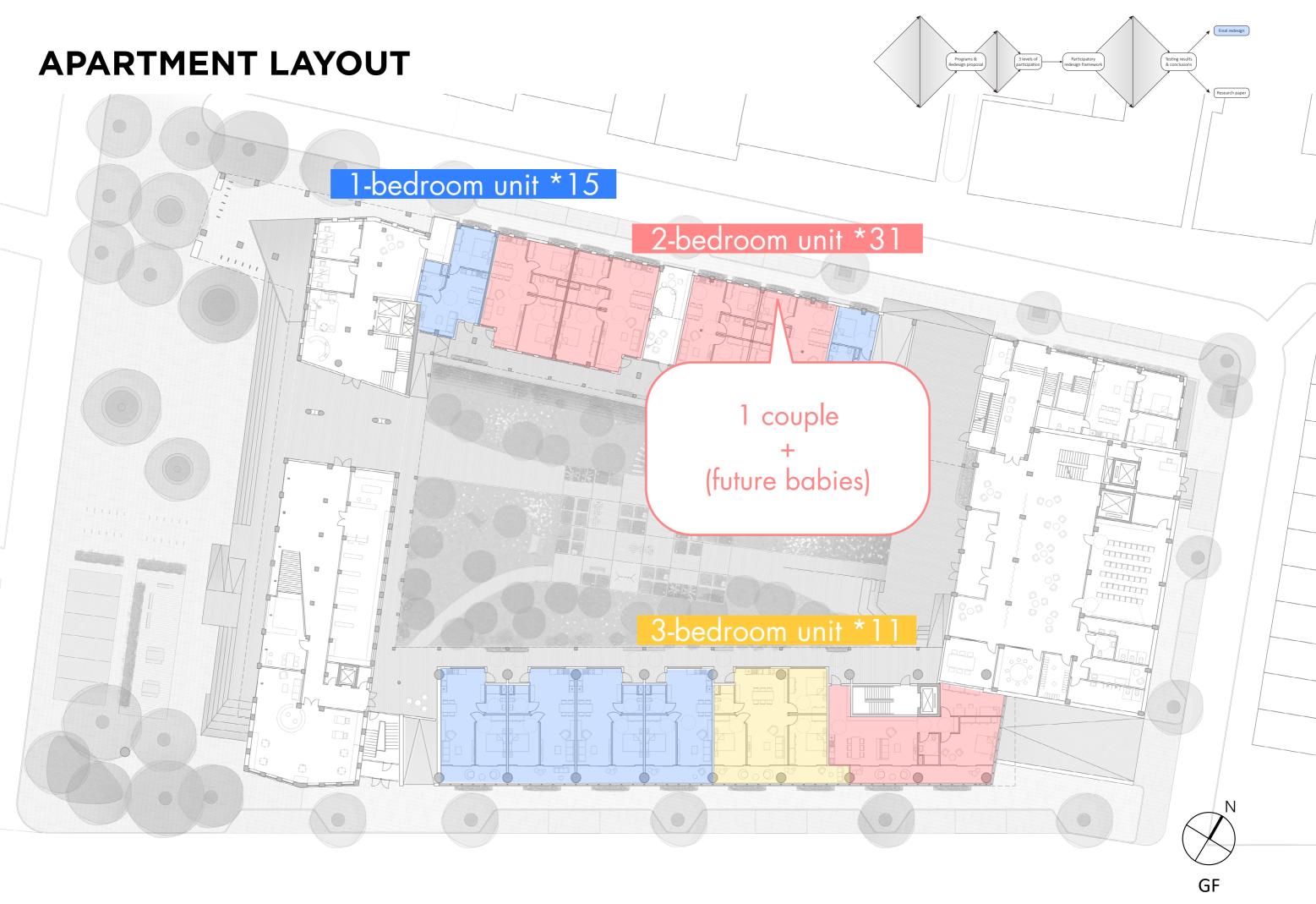
# Attentive Home

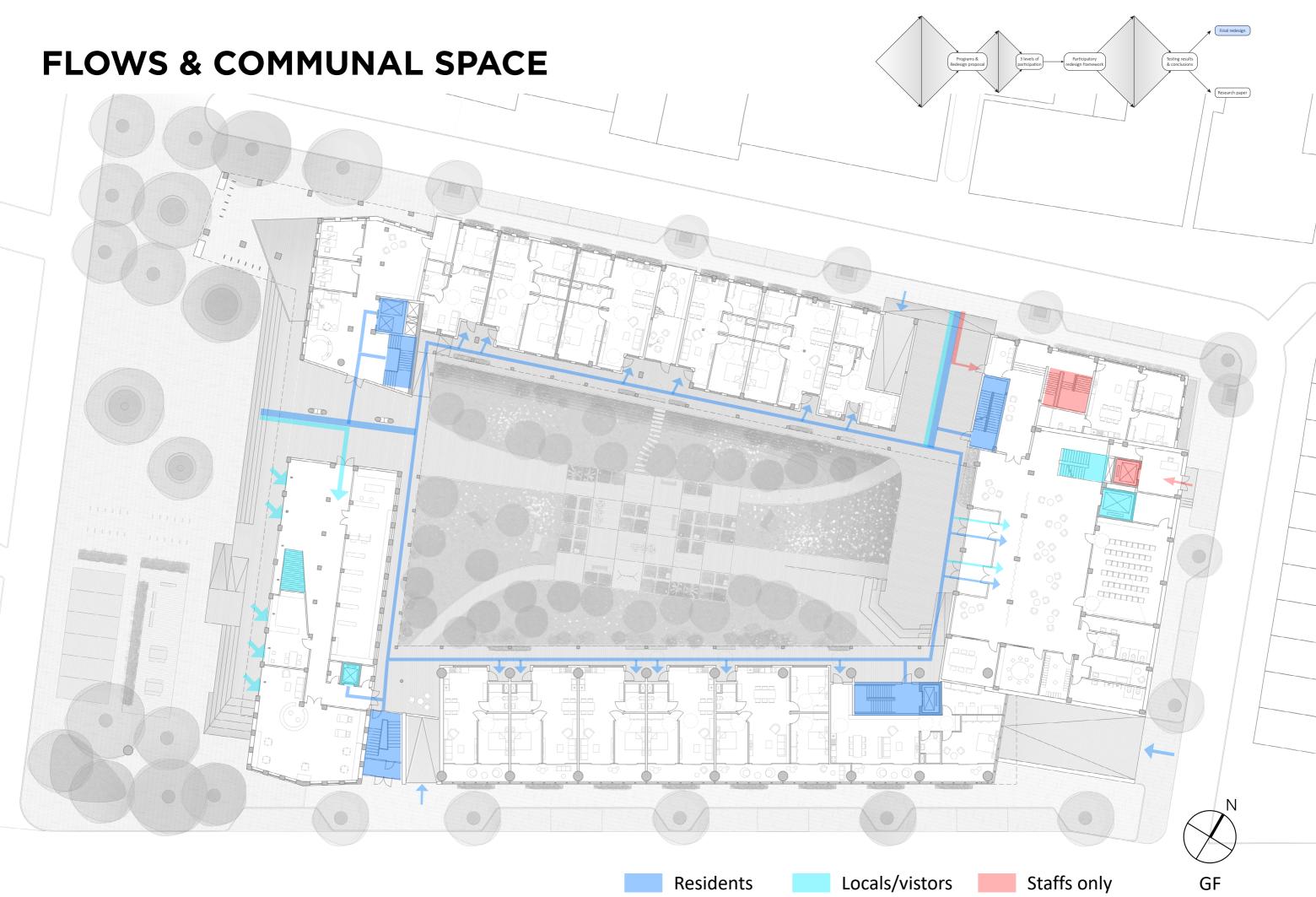


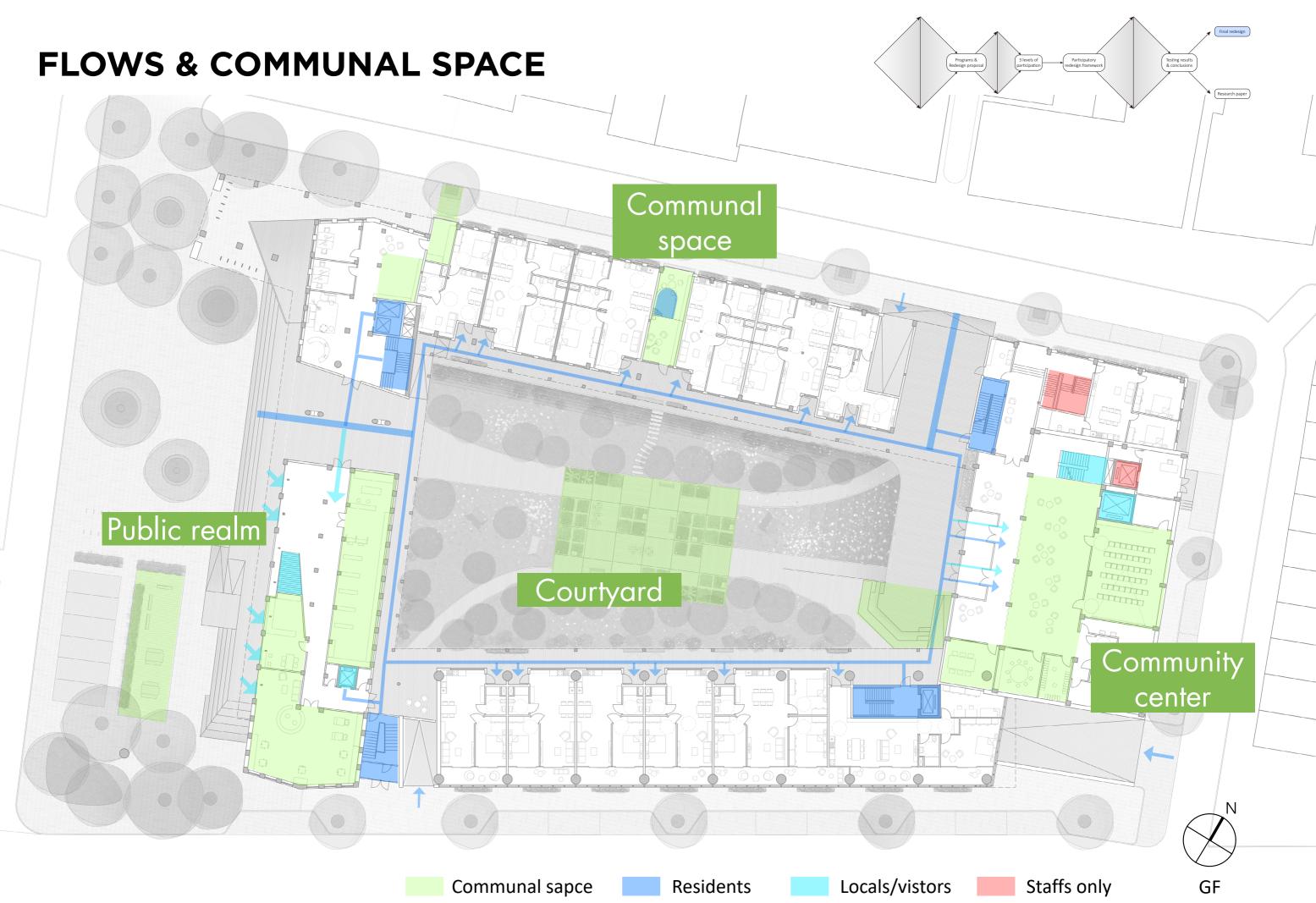


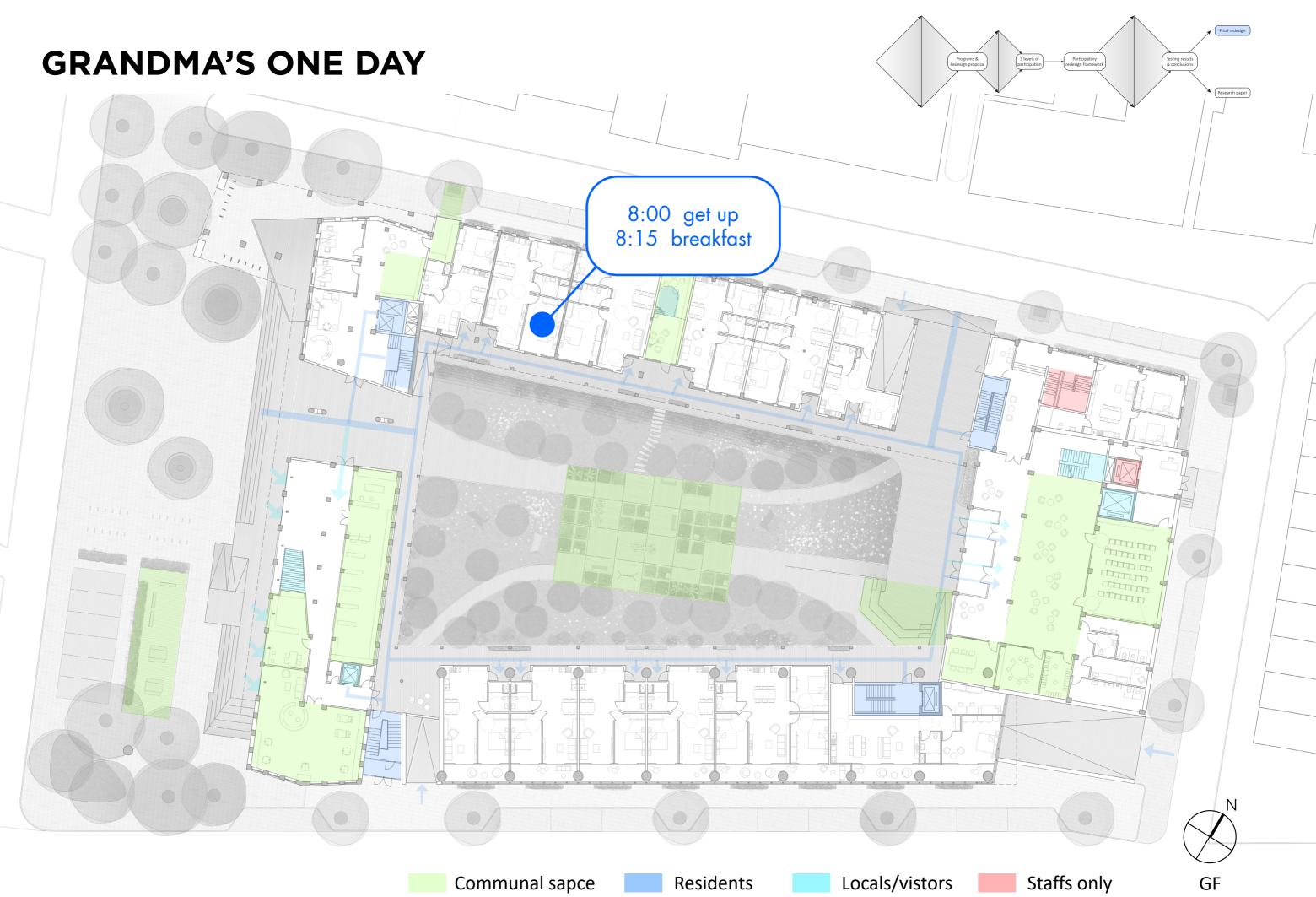


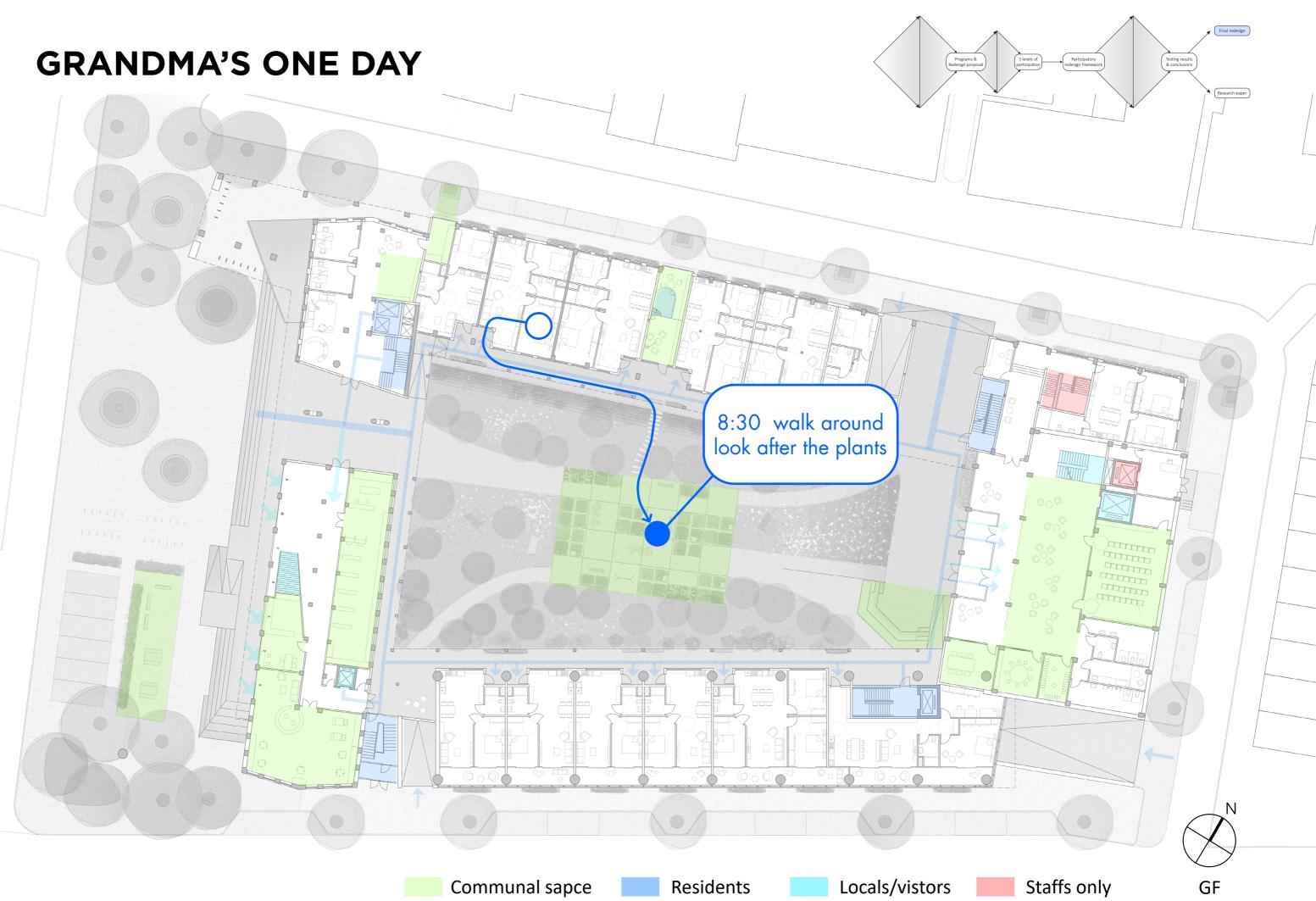


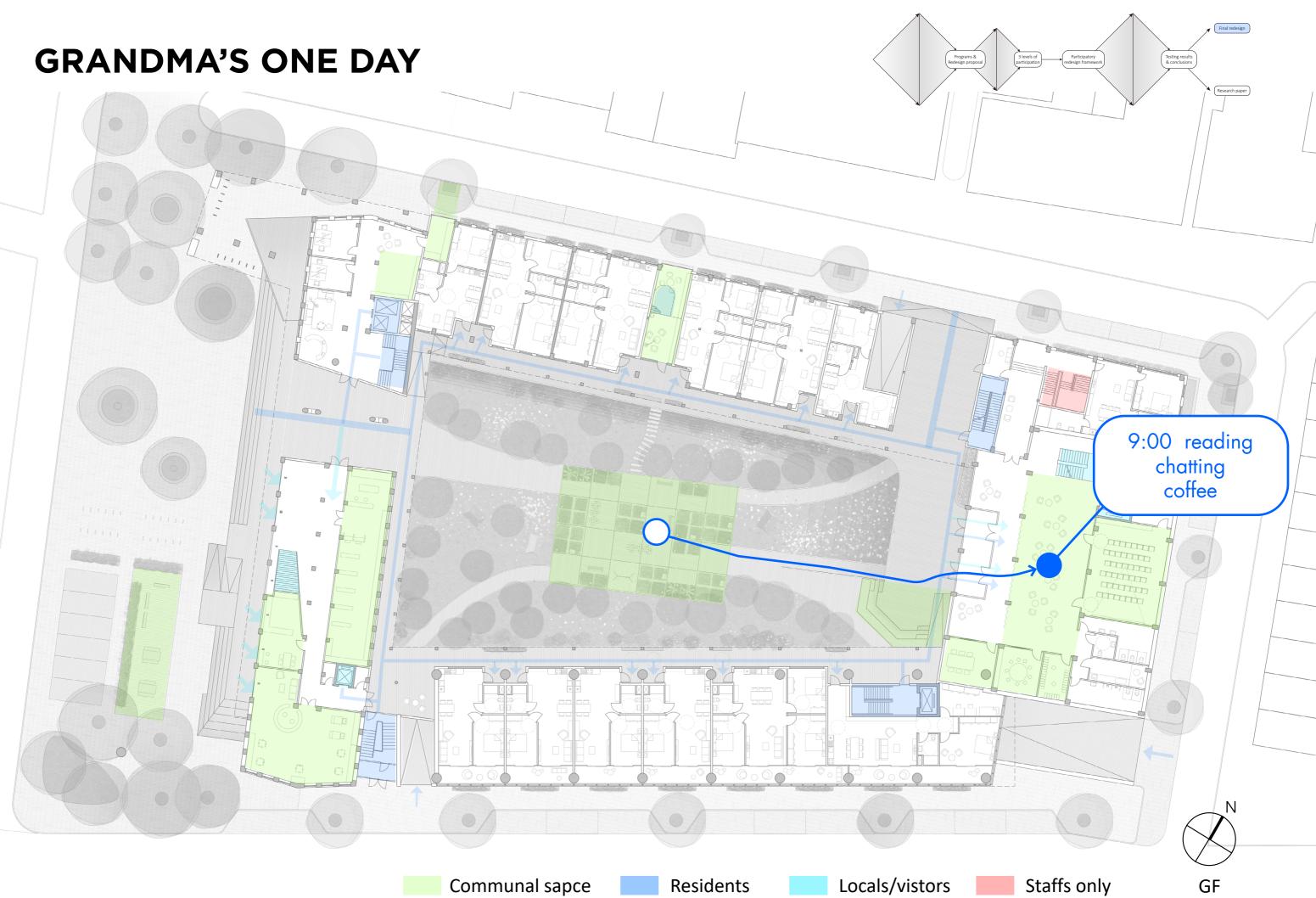




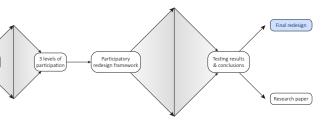






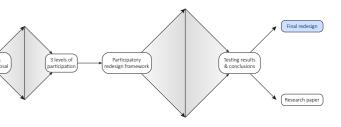








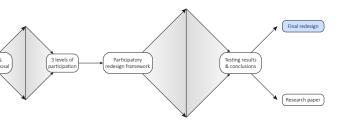








Locals/vistors

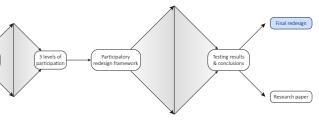




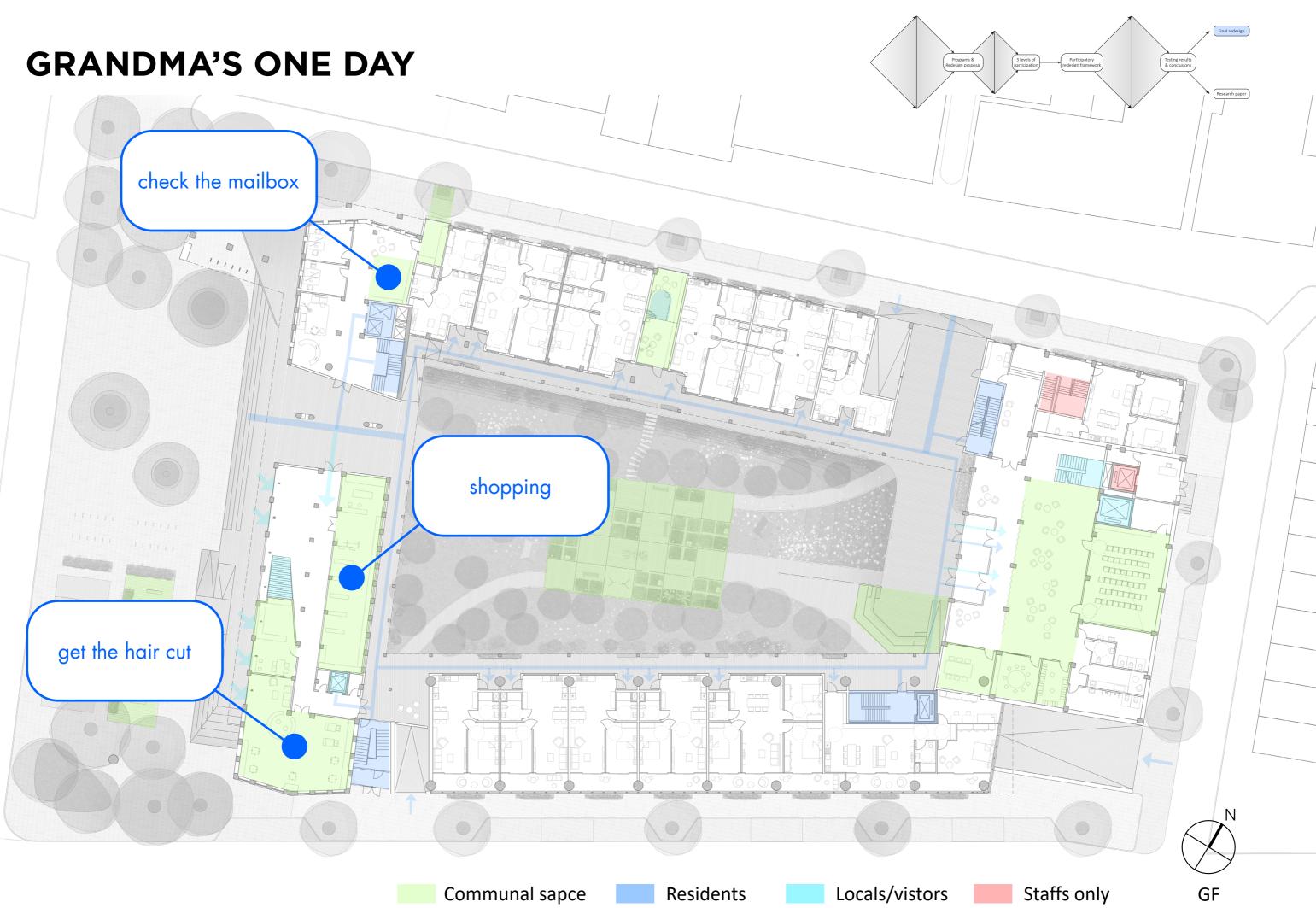




Locals/vistors







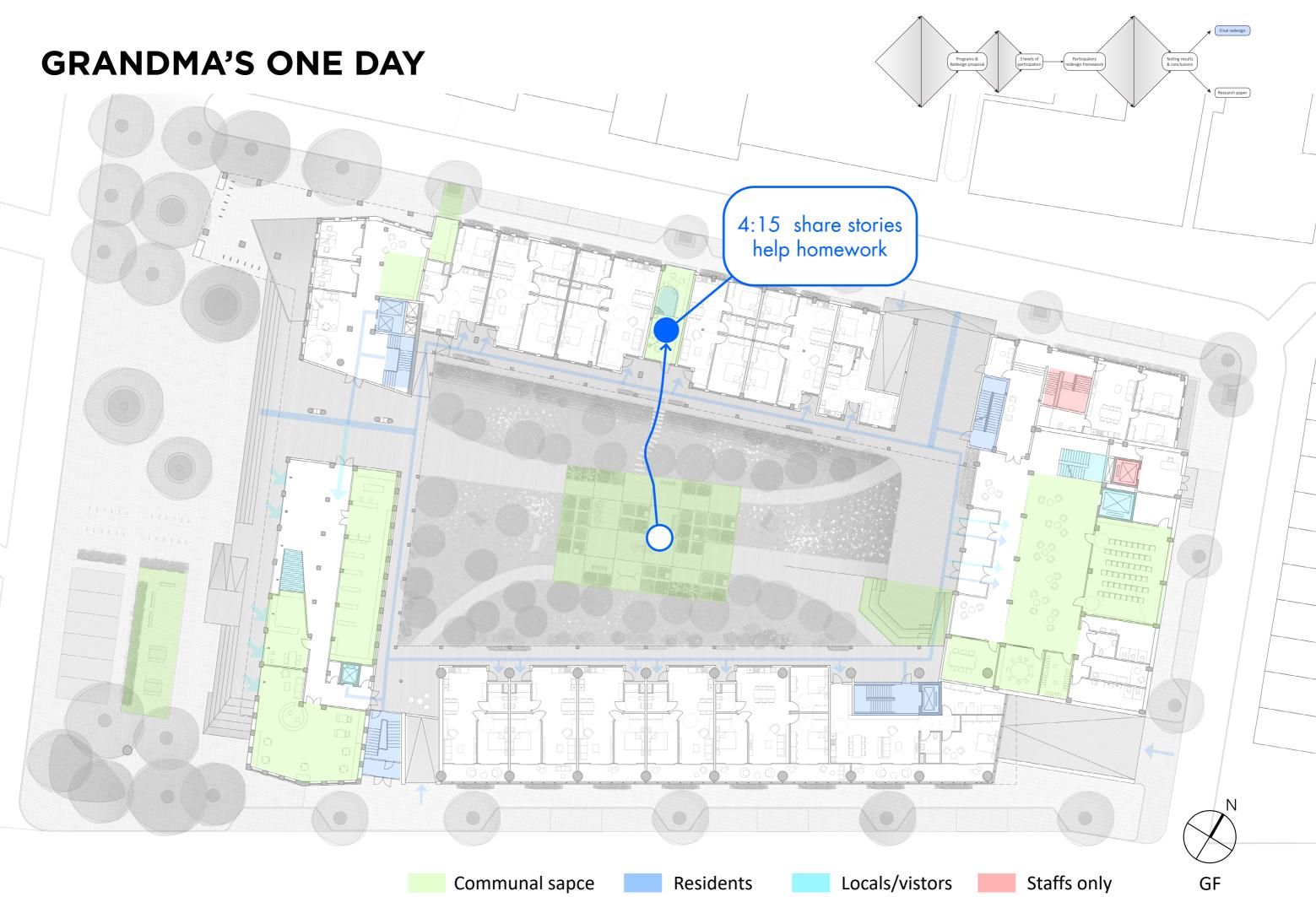
# **GRANDMA'S ONE DAY** 11111 010 3:15 play with kids teach gardening

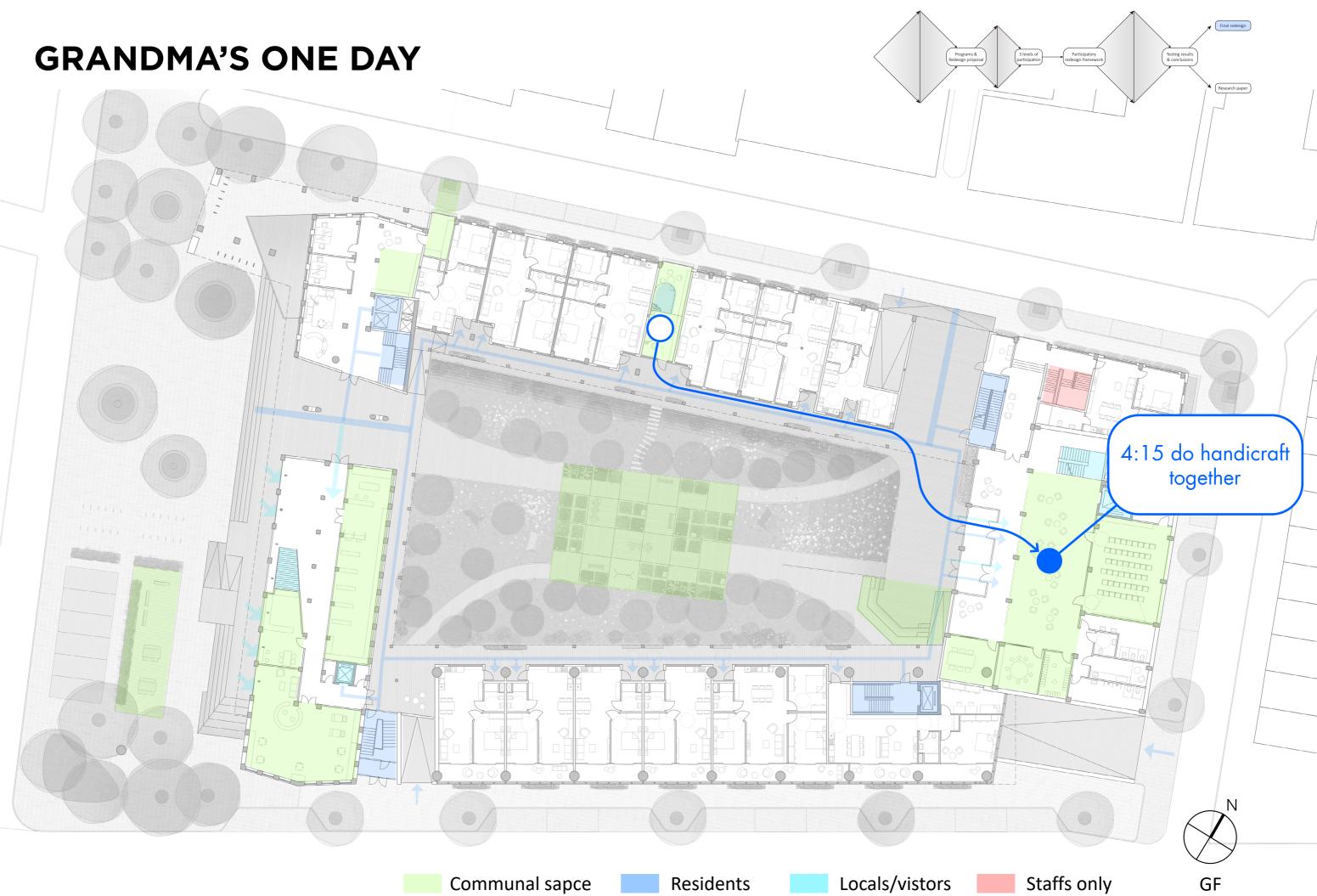
Communal sapce

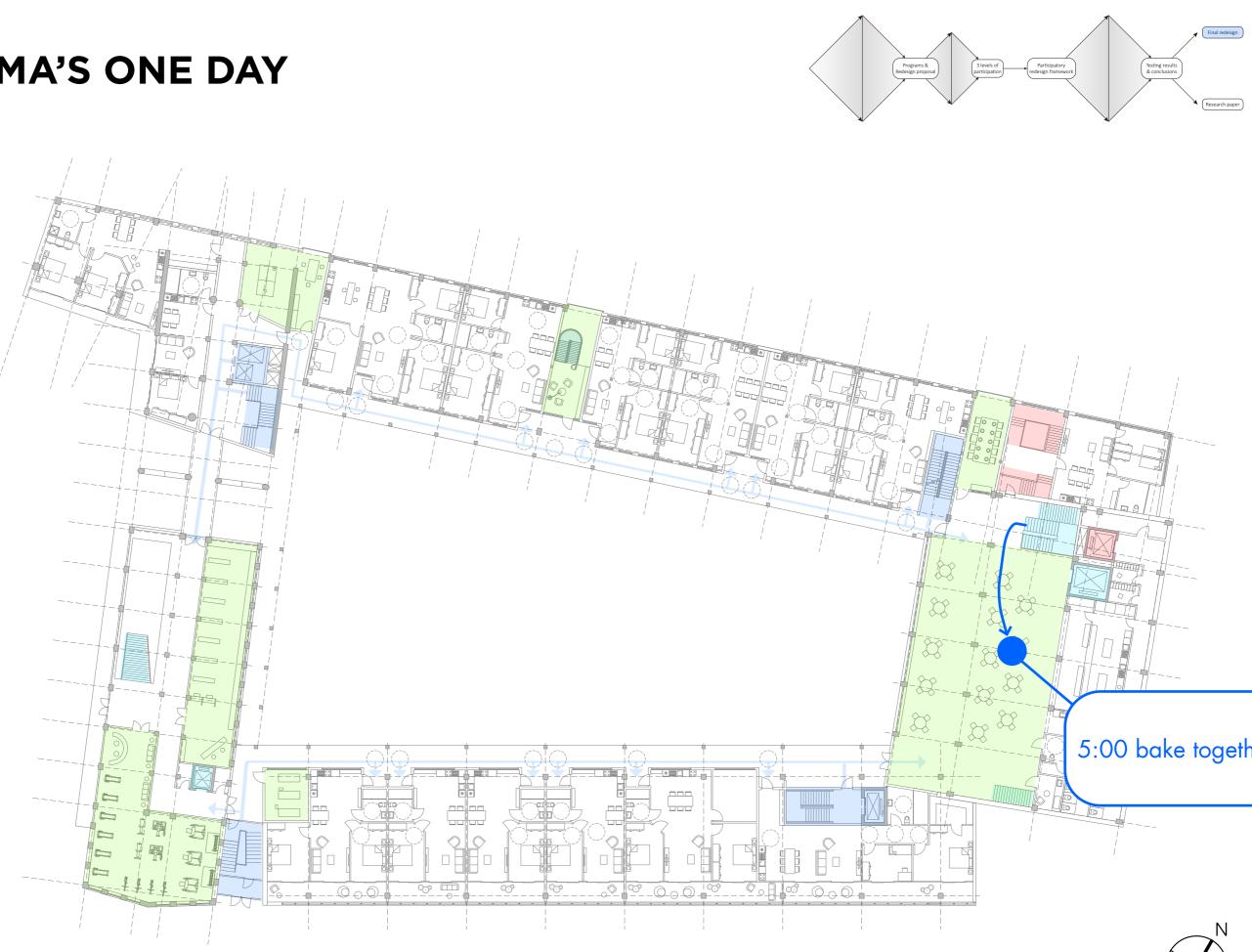
Residents

Locals/vistors



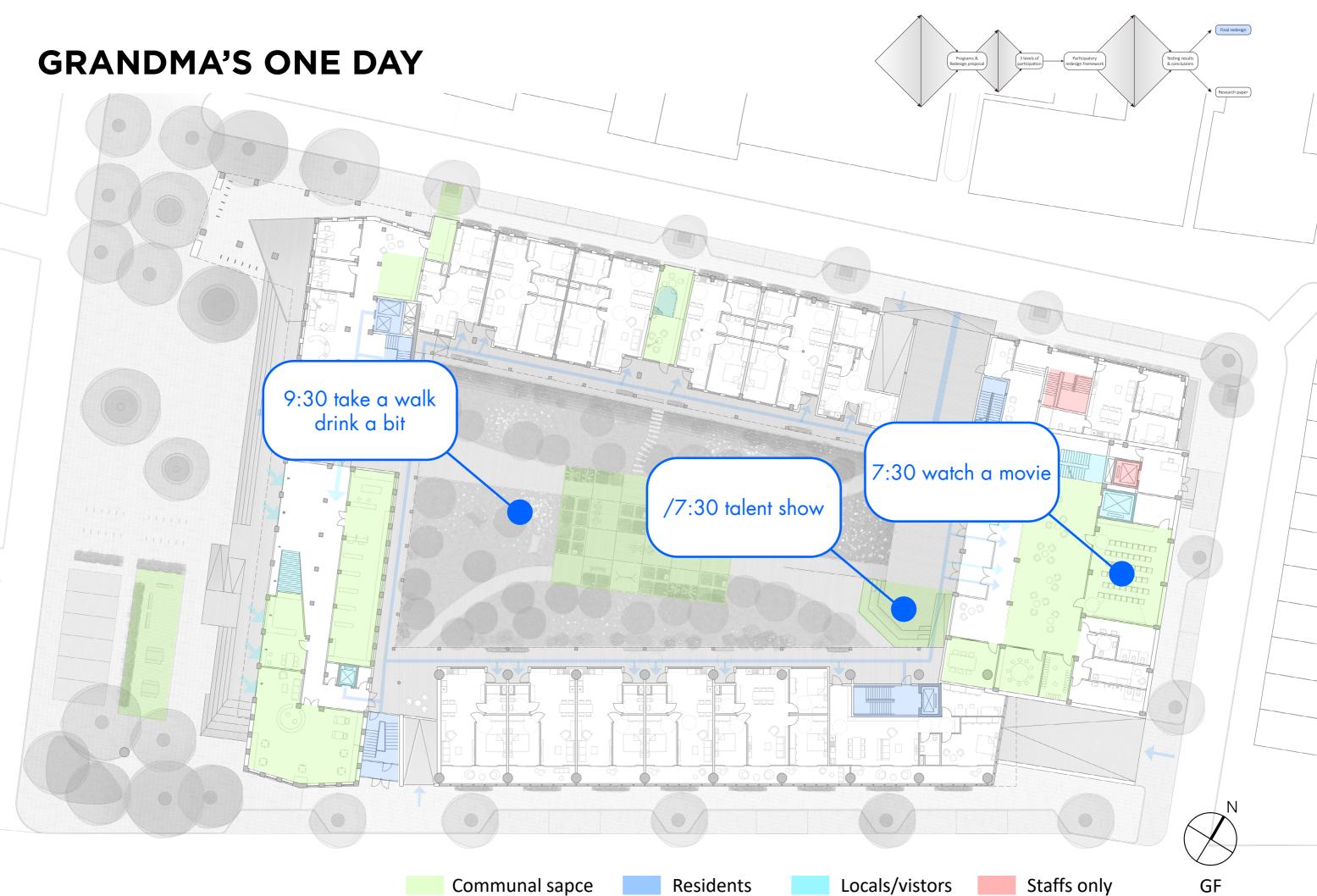


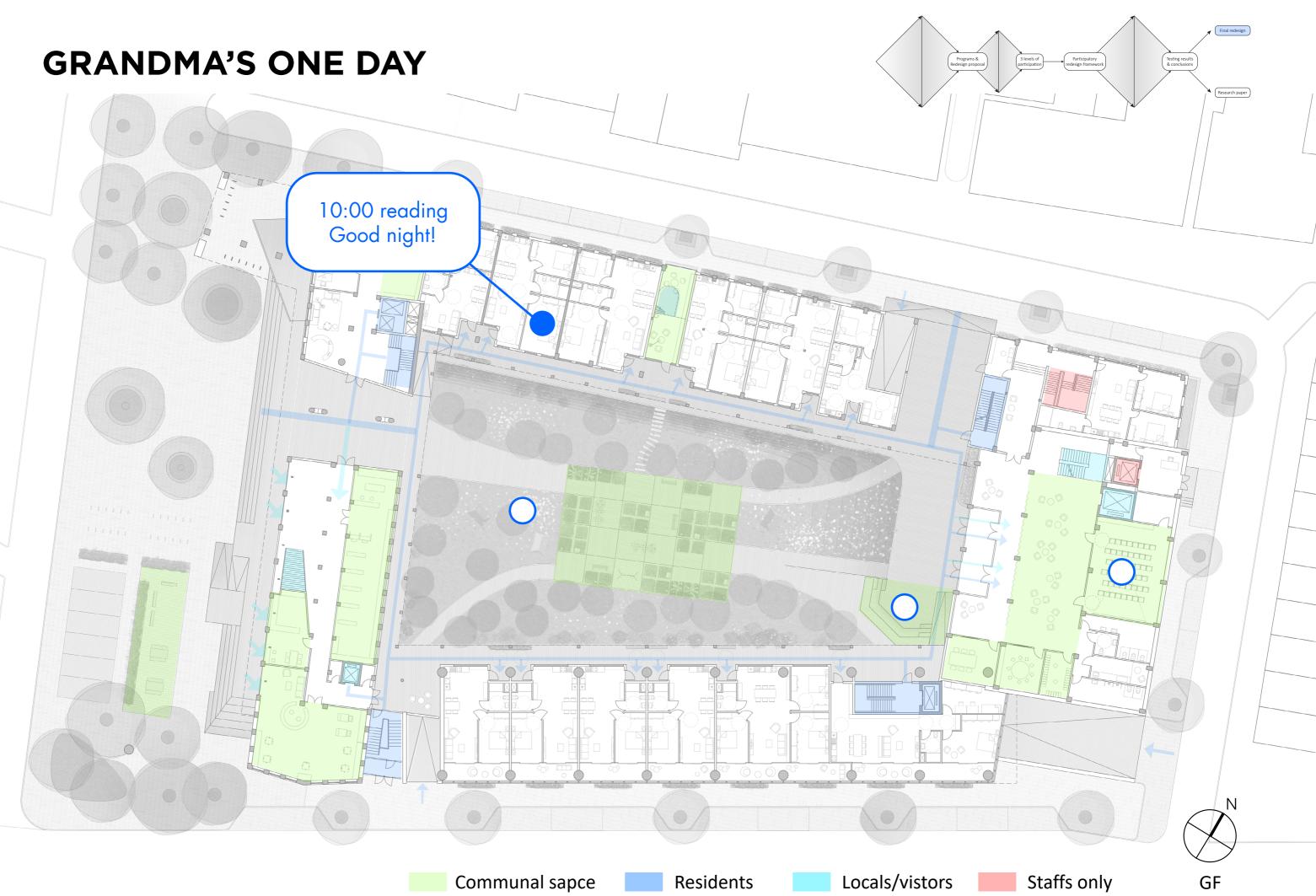


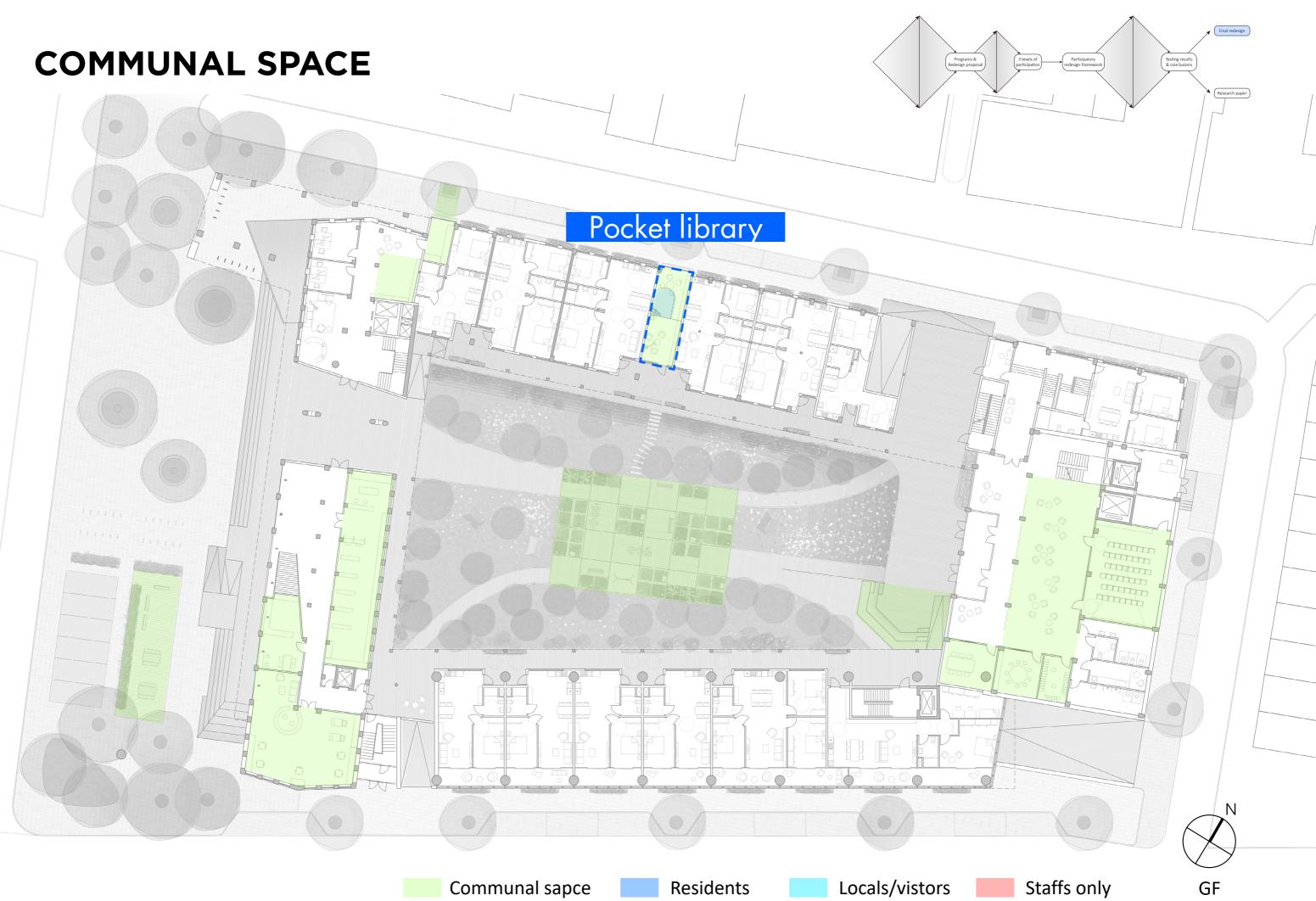


#### 5:00 bake together





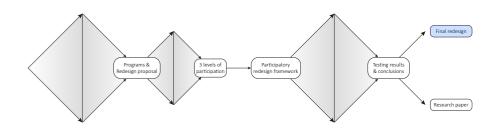


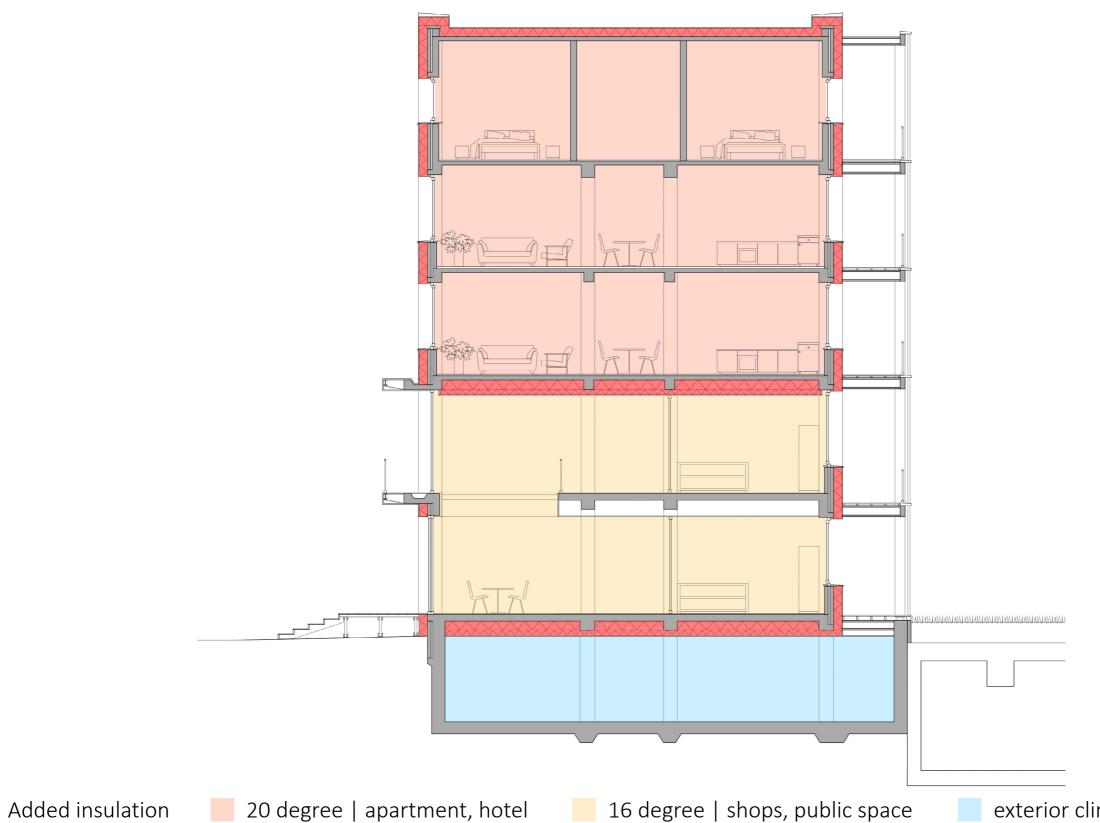




Sectional perspective

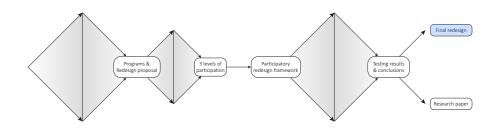
#### **CLIMATE DESIGN: Thermal Zones**

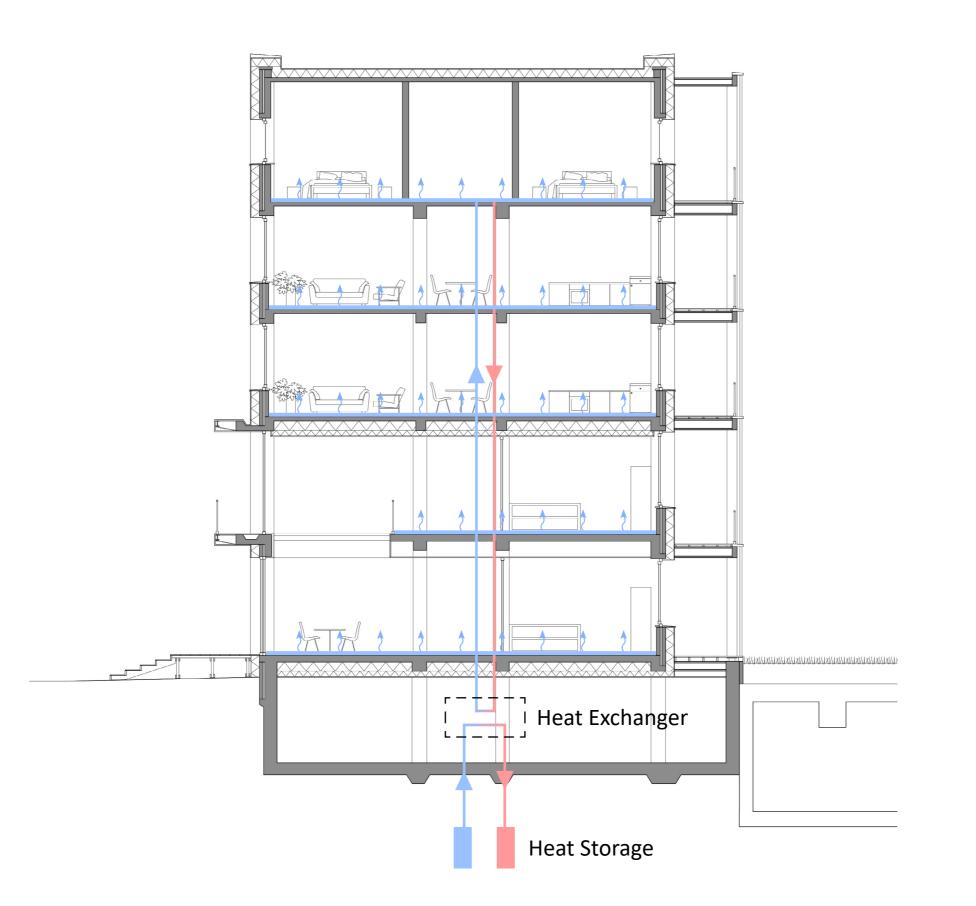




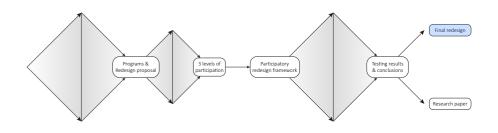
exterior climate | techniques, storage

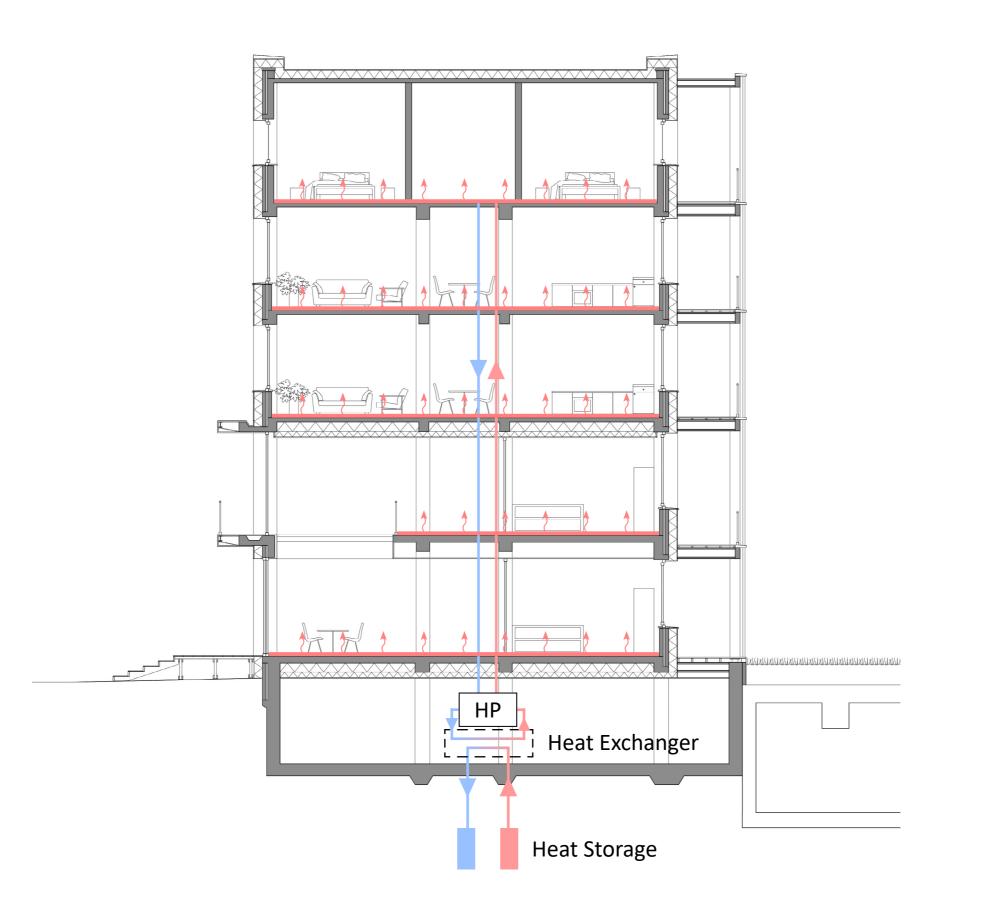
### **CLIMATE DESIGN: Floor Cooling**





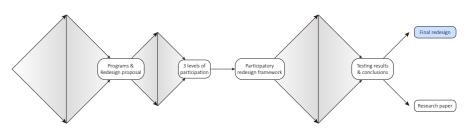
#### **CLIMATE DESIGN: Floor Heating**

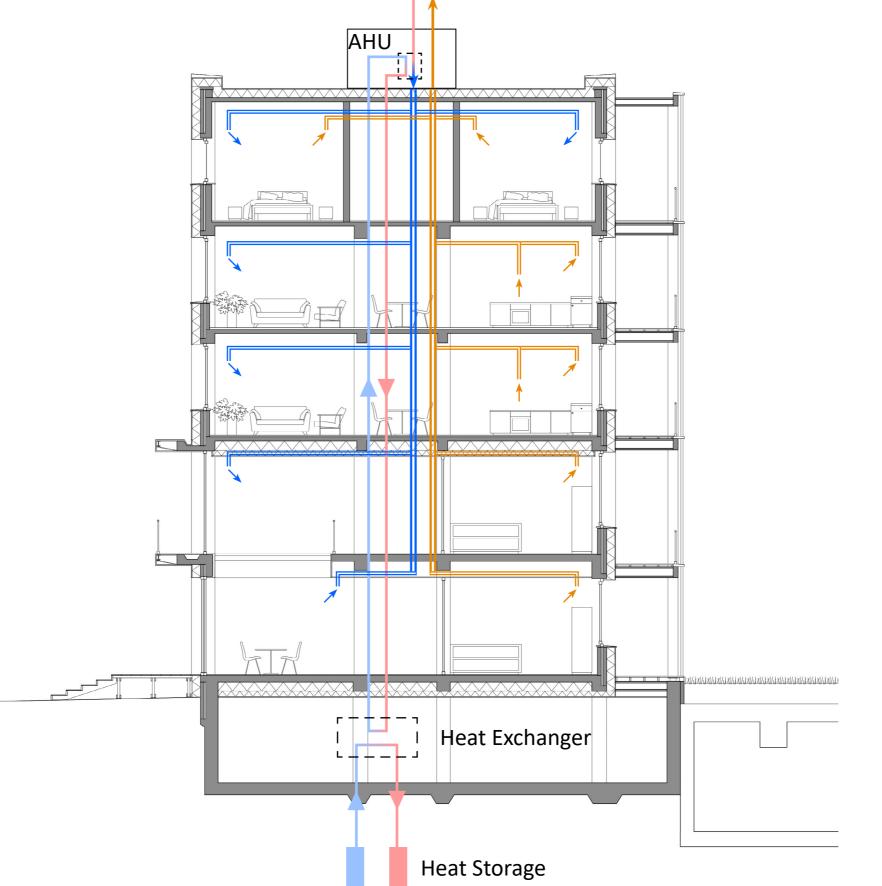




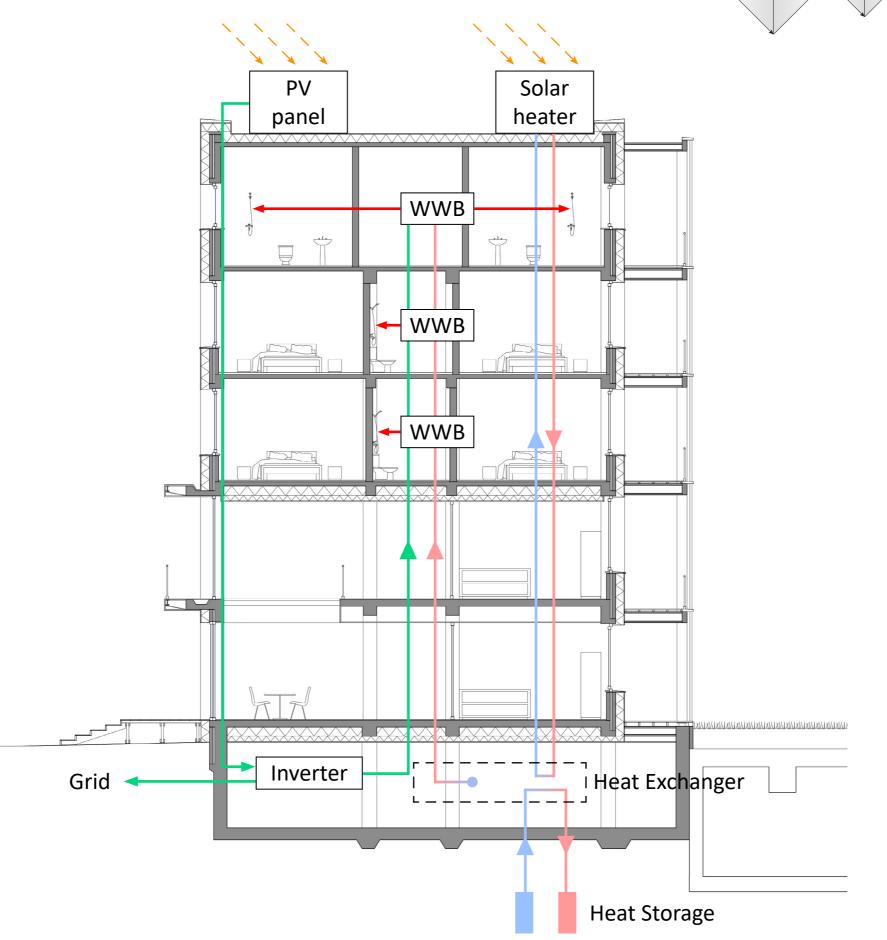
Winter

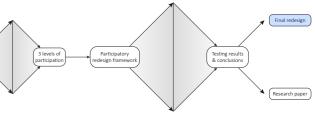
#### **CLIMATE DESIGN: Ventilation**



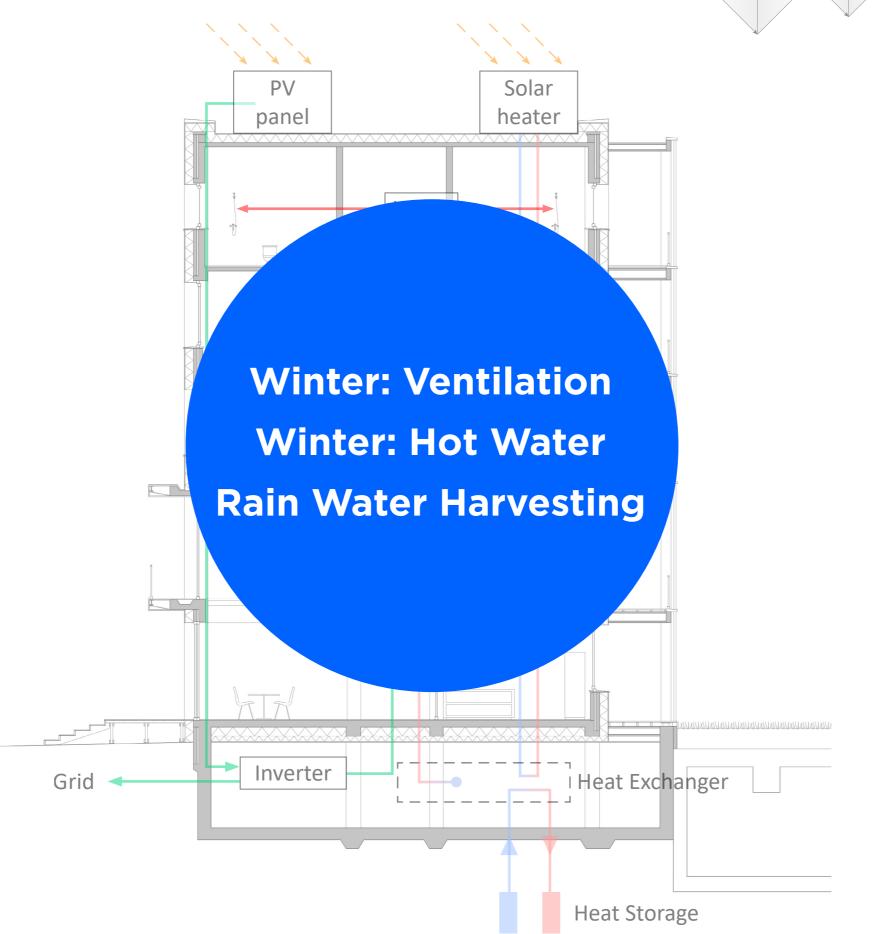


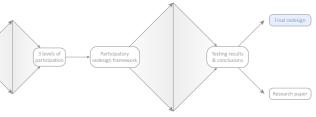
#### **SOLAR ENERGY**

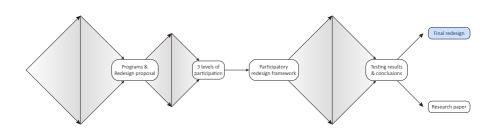


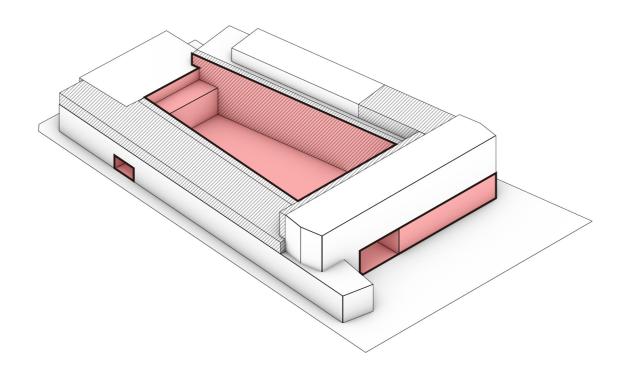


#### **SOLAR ENERGY**

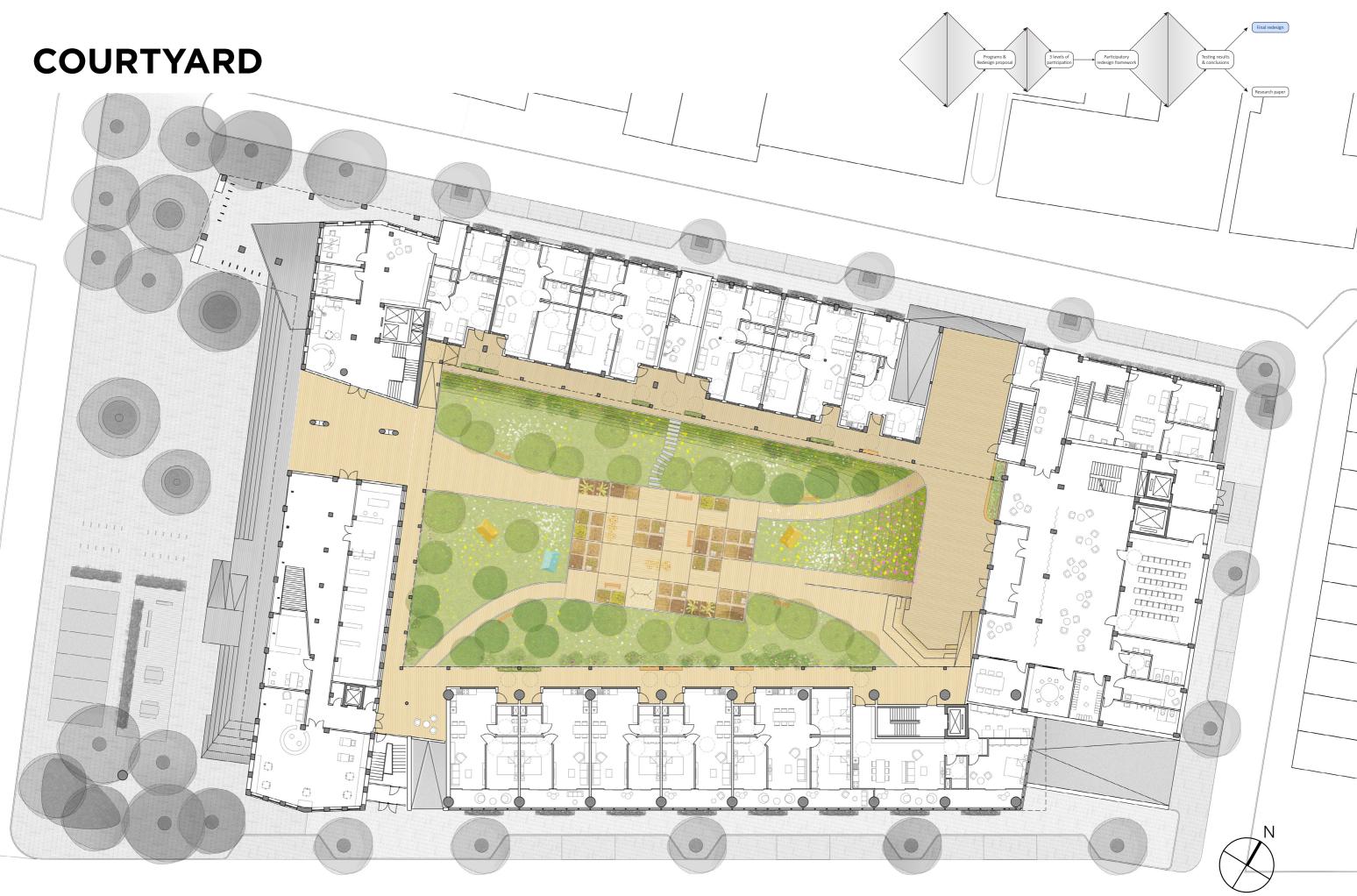




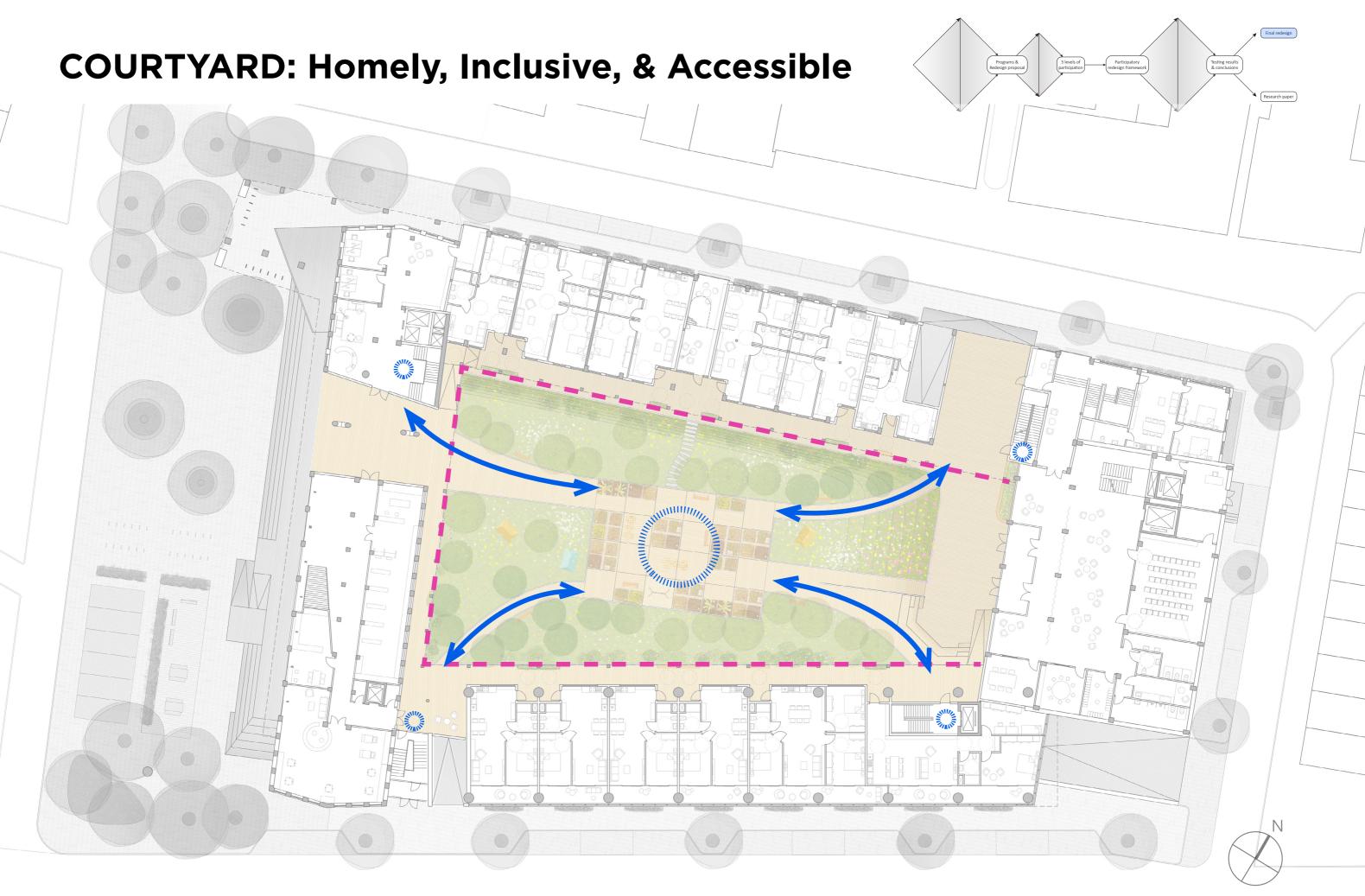




# Inclusive Core

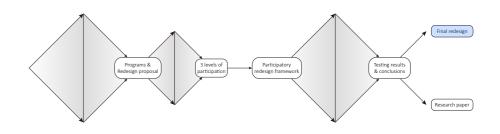


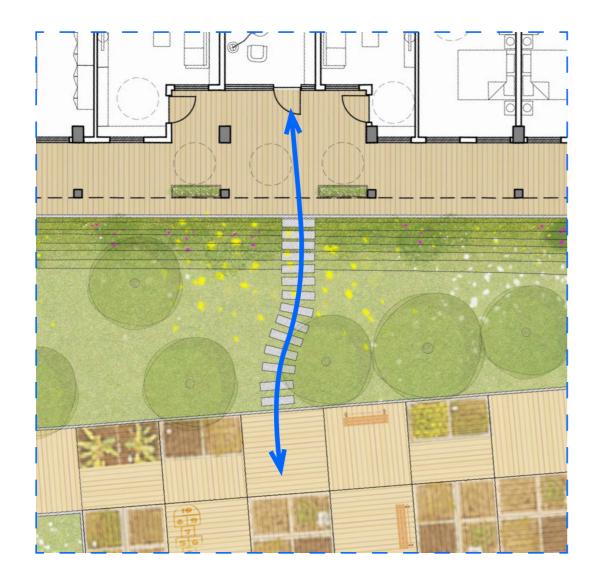
Site Plan

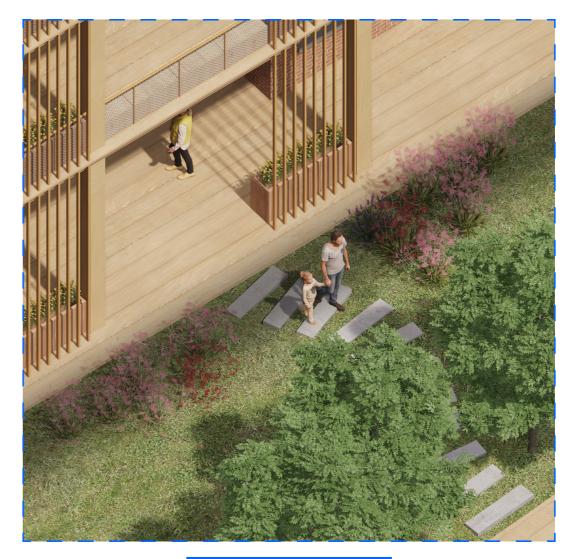


Site Plan

## **COURTYARD: Height Differences & Transition**

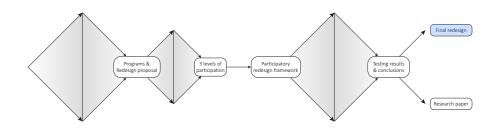


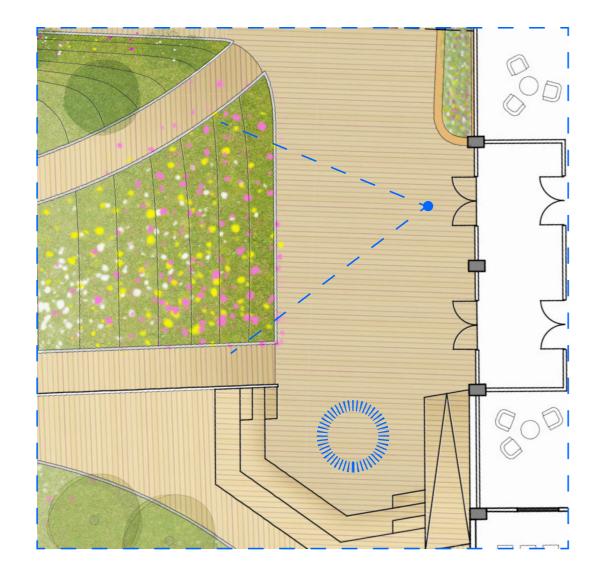






## **COURTYARD: Height Differences & Transition**



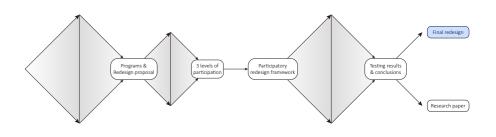




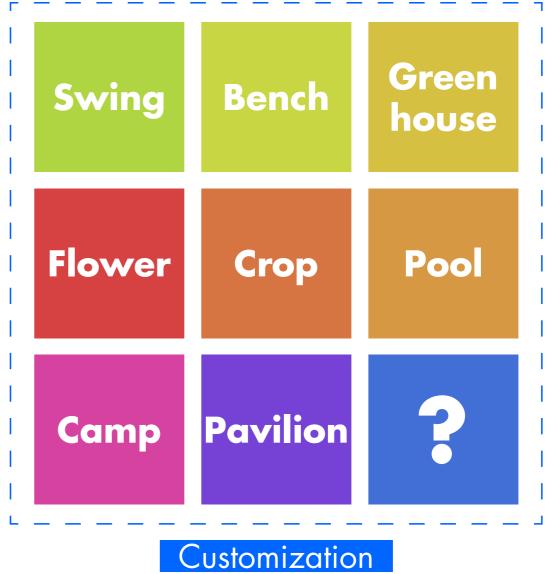
Gathering Space

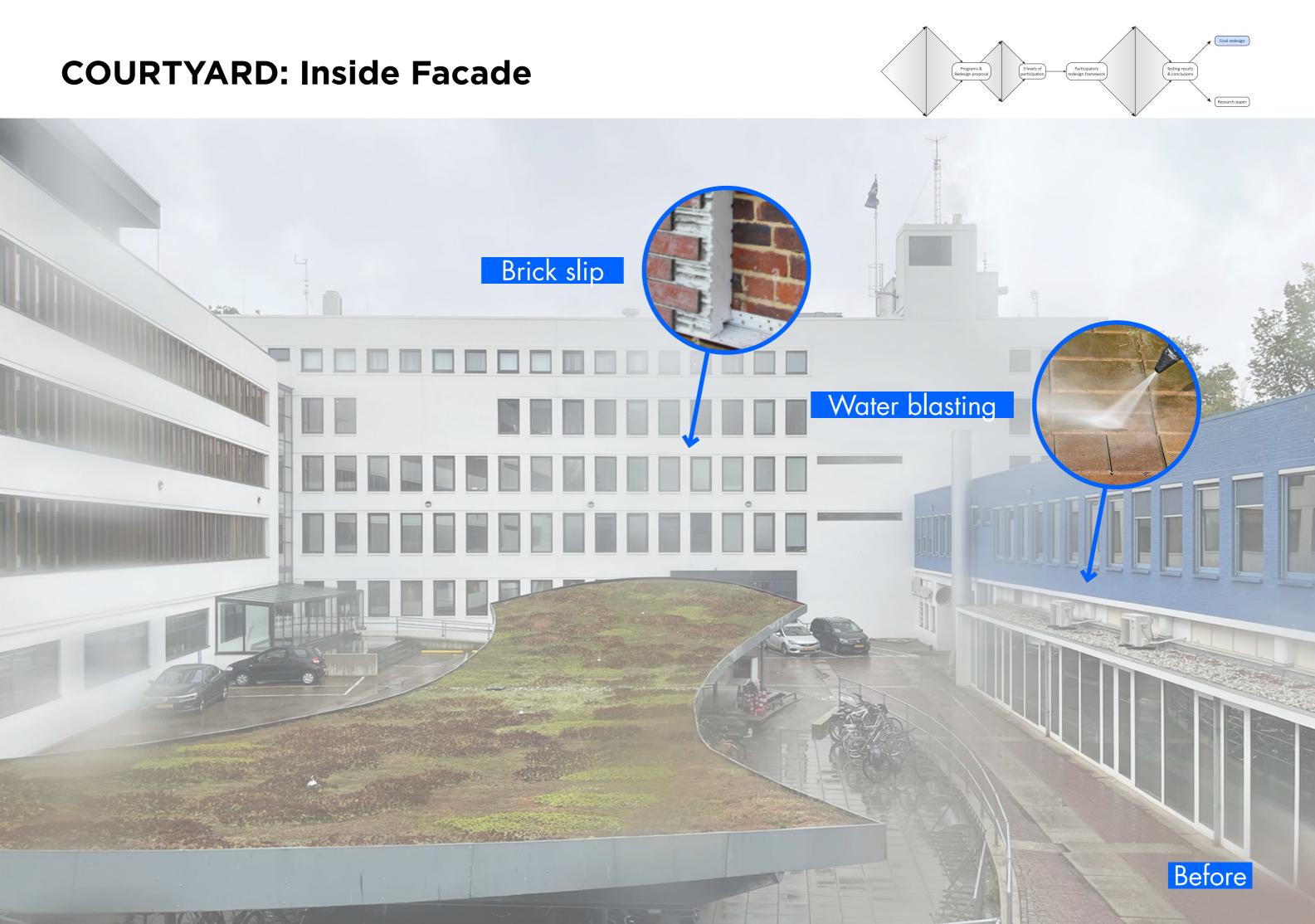


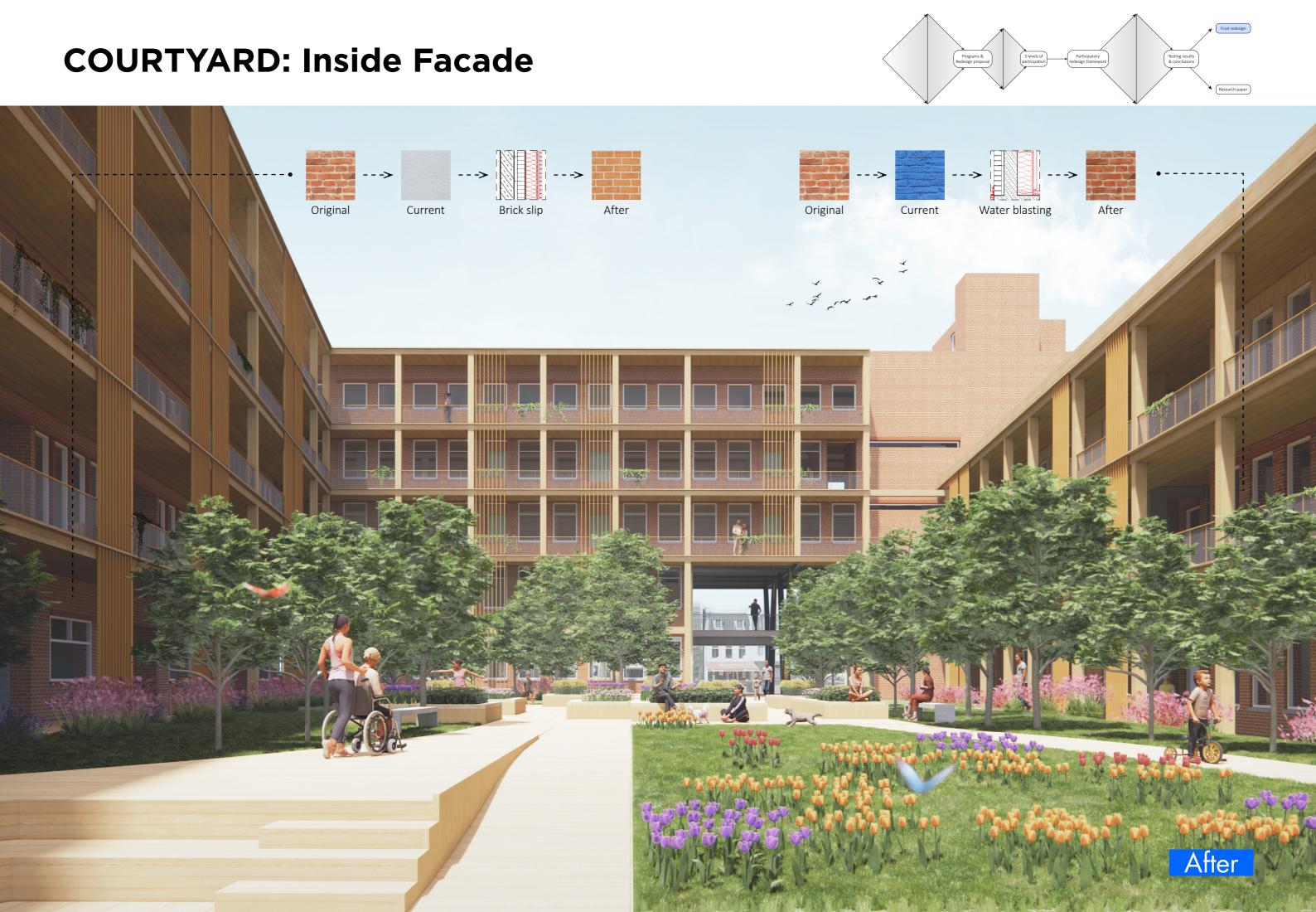
#### **COURTYARD: Modularity**



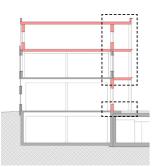








#### **FACADE DETAILS**





- 100mm extensive green roof
   10mm filter fleece
   20mm drainage layer
   protective fleece
   2-ply bituminous sealant layer
   (water proofing membrane)
   300mm EPS
   vapour barrier
   250mm load bearing panel with
   sounding proofing infill
   10mm sheathing
- 2 20/40mm battens/ counter battens damp-open sealant layer

12.5mm fibre cement board 350mm timber post inlaid straw bale

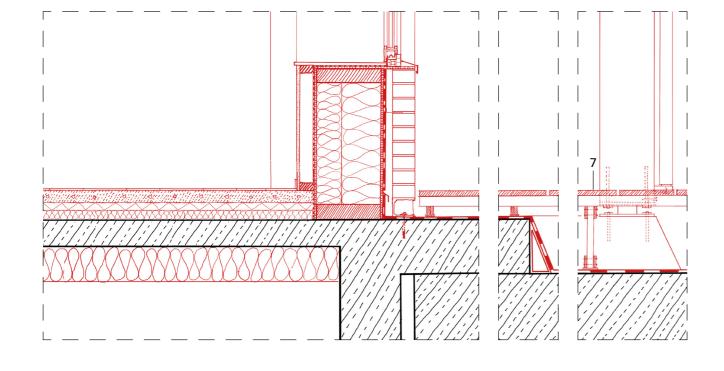
12mm OSB vapour barrier 80mm installation gypsum board

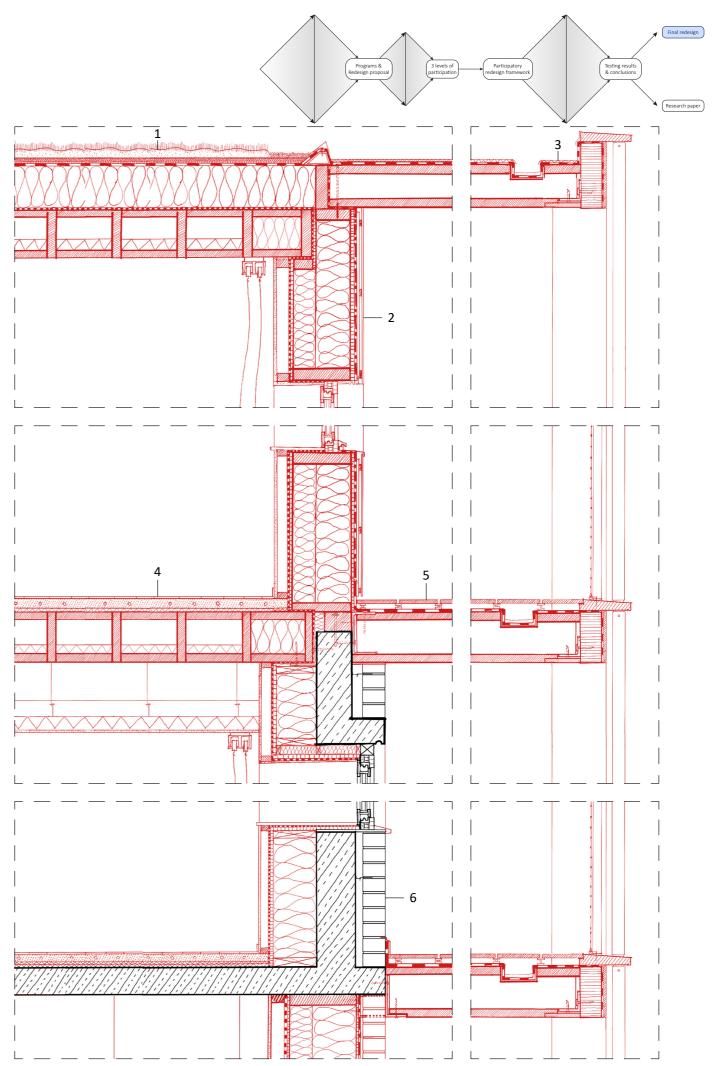
- 3 10mm protective layer1.2mm PVC sealant layer200mm load-bearing roof panel
- 4 20mm terrazzo/ 8mm oak strip parquet70mm cement screed with underfloor heating

20mm EPS impact sound proofing 20mm EPS thermal insulation 300mm load-bearing floor with sound proofing infill 300mm service space alum. supporting structure 30mm acoustic plaster 26mm pine floor board raised floor pedestal

- 5 1.2mm PVC sealant layer 200mm load-bearing floor 100mm existing brick
- 6 50mm infilled insulation
  220mm reinforced concrete
  300mm EPS thermal insulation
  12mm OSB
  vapour barrier
  80mm installation
  gypsum board
  26mm pine floor board
- 7 450mm deck framing1.2mm PVC sealant layer450mm load-bearing floor

Remained Added





# **CONNECT THE COMMUNITY AGAIN!**



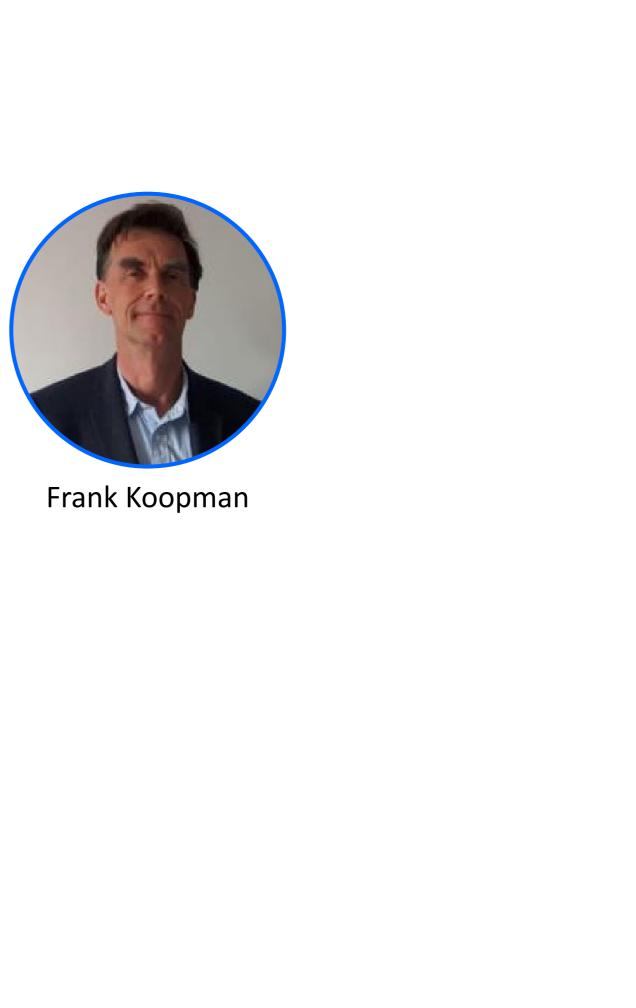
### ACKNOWLEDGEMENT



Joana dos Santos Gonçalves



Wido Quist





Baoky. K. Y. Huang

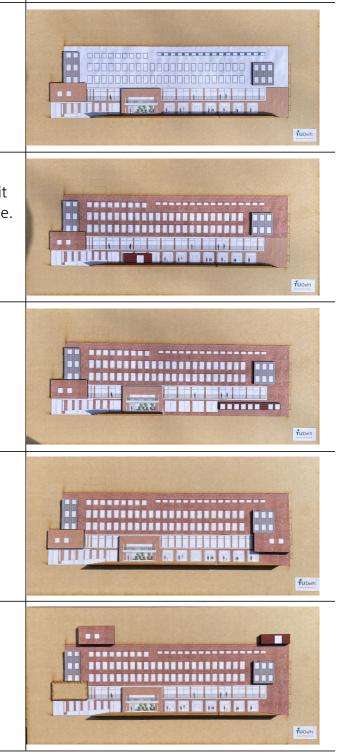


Aiste Rakauskaite

## **TESTING RESULTS**

	Peception & feeling	Spatial & functional demand	Aesthetic taste	
Participant 1 (group of 3)	The new entrance is very open and inviting.	We like balcony space. I think it will be busy, so doors with lots of openings are better. For housing and public function, I want it more open.	It's better to use same materials as they next to each other.	
Participant 2	I prefer the dark wood to the light one, because dark red color feels more stable and works well with bricks.	I like the scenarios where there are many people.	I'm not sure if wood & brick are compatible on the ground floor. But it seems that all bricks together are nice.	
Participant 3	You have to do something like the passage to make the building open.		The bay windows are 3-dimentional and make the wall a bit different, otherwise it will be too even and boring. The passage doesn't fit the design when compared to bay windows in terms of material & structure.	
Participant 4	I don't like too many railings, because they make the building look too complicated and like prevent me from appraoching.		The combination of the frames (1F) and other parts is better. Add the volume on the right for balance Put same material together!	
Participant 5	I like stairs & openings, because I feel they are contrast to police station. I see there is some stairs and it's good to extend them.	I want to put some coffee shop on the left with colorful look, and red lights. Put more functions on the rooftop		

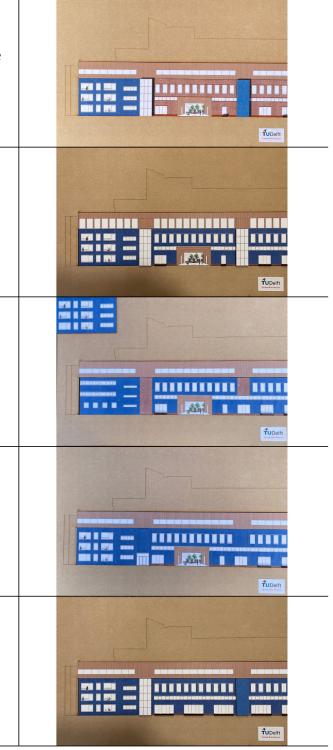
# Overall preference



## **TESTING RESULTS**

	Peception & feeling	Spatial & functional demand	Aesthetic taste
Participant 6	Considering it's going to be housing program, I prefer big windows.	The passage is a good eye-catcher for the community center.	I choose blue on the left, because I want to keep something from the old building. And for the contiunity of the rest building, I want some blue on the right. Because there is a lot of "vertical" going on, I want the added floor windows to be horizontal to break up the vertical lines.
Participant 7 (group of 2)		I like natural light, so I want more glasses and bigger windows. I like the scenario with people.	Symetry is important.
Participant 8	The blue color we have now is nice, which suits in this quiet area. The area is very quiet, and small windows suit here.	The passage is cool because it seems I can walk into the nice courtyard. Because the functions of two parts are separated, I can seperate the facade as well. I don't like too much interaction in this quiet area.	The horizontal one is more in balance with the below part, and responds to the existing windows. Wood works well with stones. Small spicy thing is exciting.
Participant 9	I like the blue color, because it is vibrant, and it makes the building unique.		(After lots of attempts) I think this proportion and rhythm of the windows are the best.
Participant 10			The horizontal window is more beautiful than others. It's good to have some parts protruded for aesthetics.

# Overall preference



## **OVERALL DESIGN STARTING POINTS**



#### Buildingwise

#### Citywise

Keep the quiet and peaceful atmosphere Keep the sense of privacy Keep the identity of the building as landmark Eliminate the sense of isolation Eliminate negative materials that bring bad memory Connect the building with the outside appropriately Add more greenery

Change the perception from institutional to homely Activate the courtyard and interior space Create co-living space and celebrate diversity Keep the exceptional structure and space Ensure the accessibility and convenience for everyone Consider circular economy and sustainable solutions

Connect the courtyard to the outside Connect the historical lanes Emphasize the historic city boundary Focus on the continuity of space and material in urban fabric Meet the municipal requirement of levels of public space Add greenery, meeting spots, sitting area for locals Give locals the chance to participate in urban space creation

### SOCIAL VALUE

KEY FIELDS Social sciences and Development

KEY STAKEHOLDERS Non-experts

**RELATED VALUES** Spiritual; Emotional; Allegorical

#### DEFINITION

"Social value encompasses the significance of the historic environment to contemporary communities, including people's sense of identity, belonging and place, as well as forms of memory and spiritual association."

(JONES, 2017)

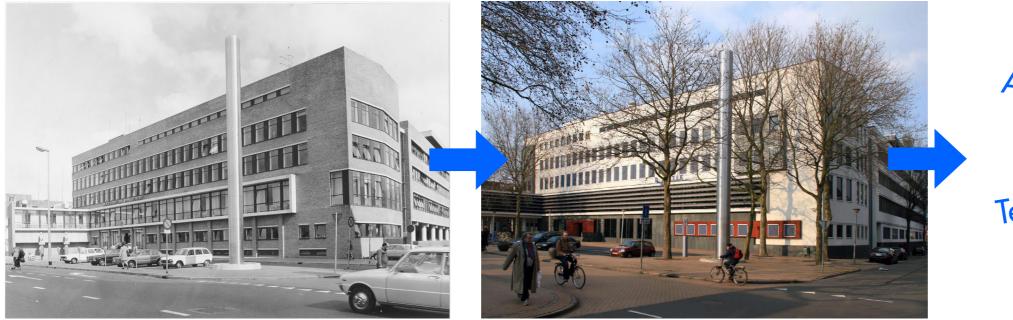




#### Activity analysis of the target groups

## **PROBLEM STATEMENT**

In the Netherlands, nearly 30% of police buildings are becoming vacant due to an organizational change within the Dutch police in 2013 (Weesies, 2017).

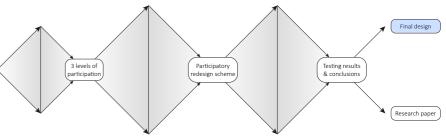


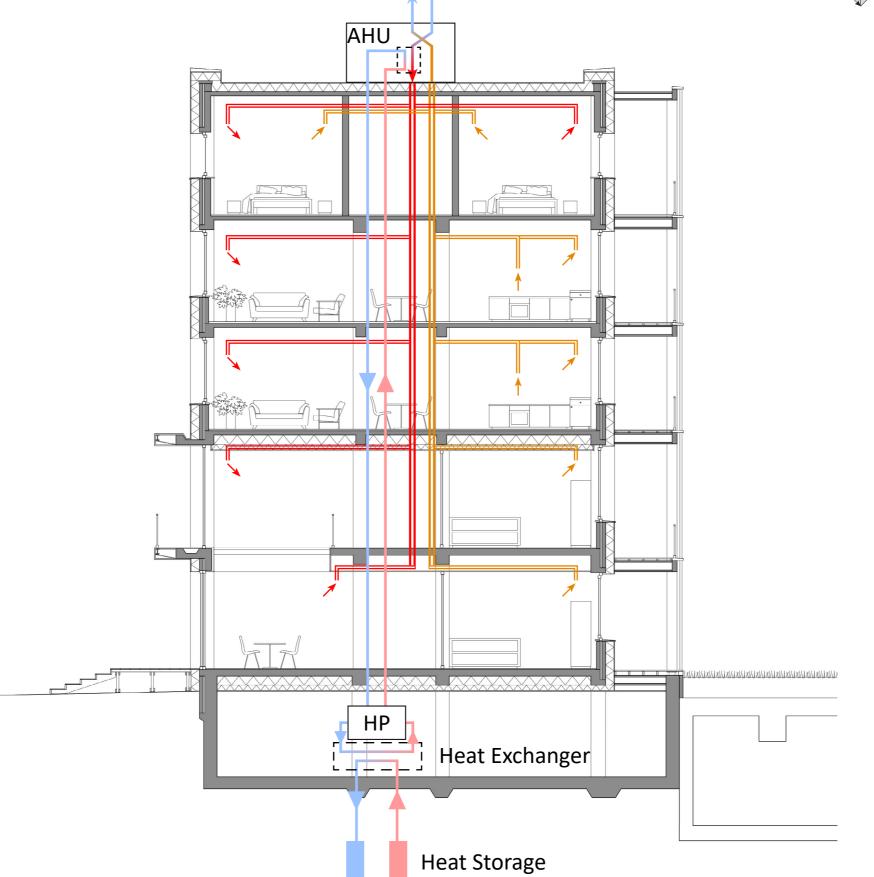
Approach

Technology



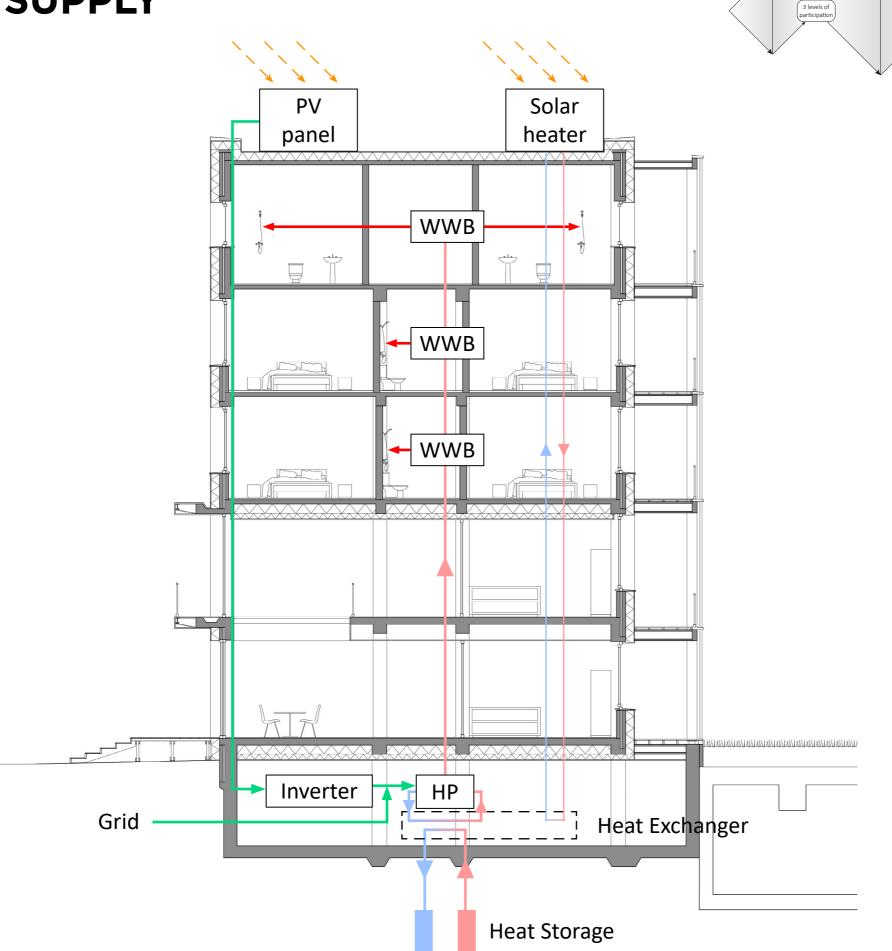
# **CLIMATE DESIGN: VENTILATION**



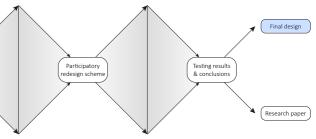


Winter

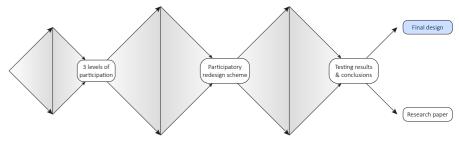
#### HOT WATER SUPPLY

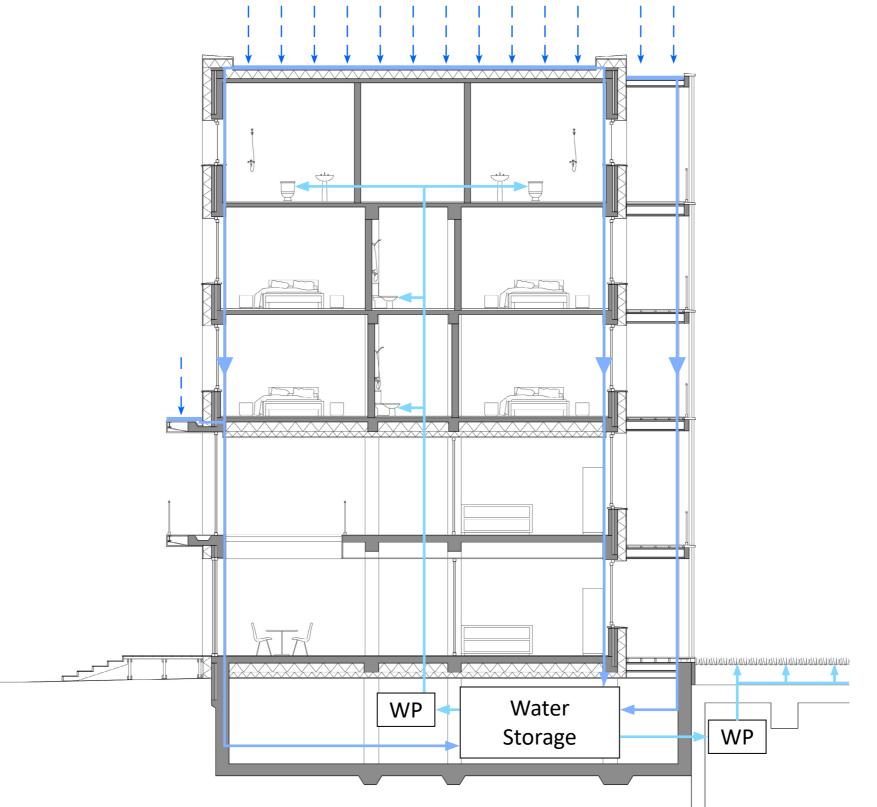


Winter

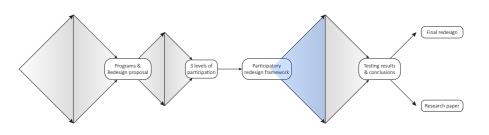


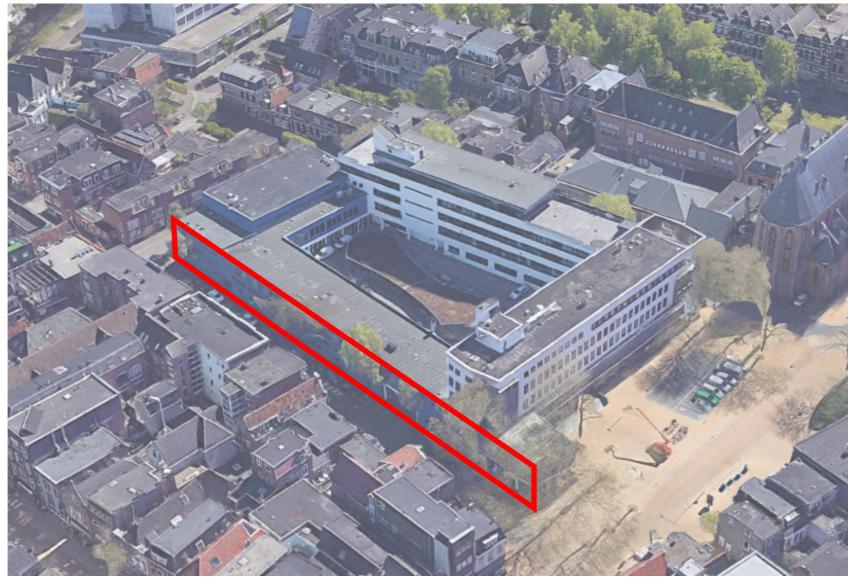
# **RAIN WATER HARVESTING**





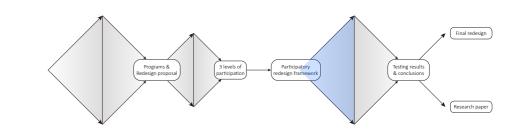
#### THE NORTH FACADE

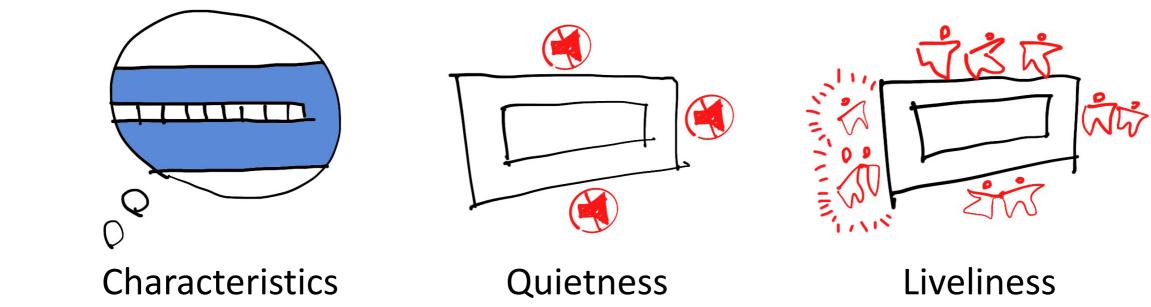


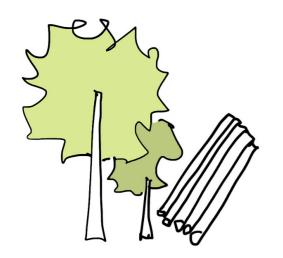




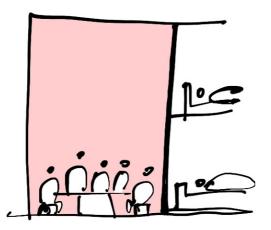
# **FACADE REDESIGN STARTING POINTS**



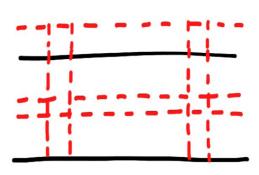




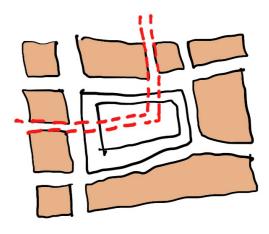
Nature



Function

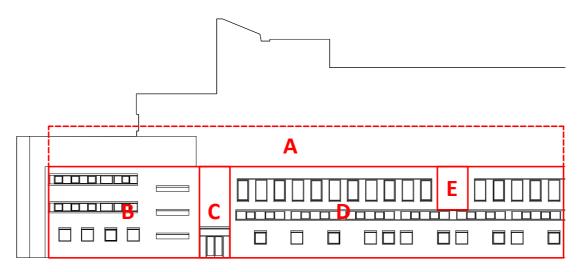


Rhythm



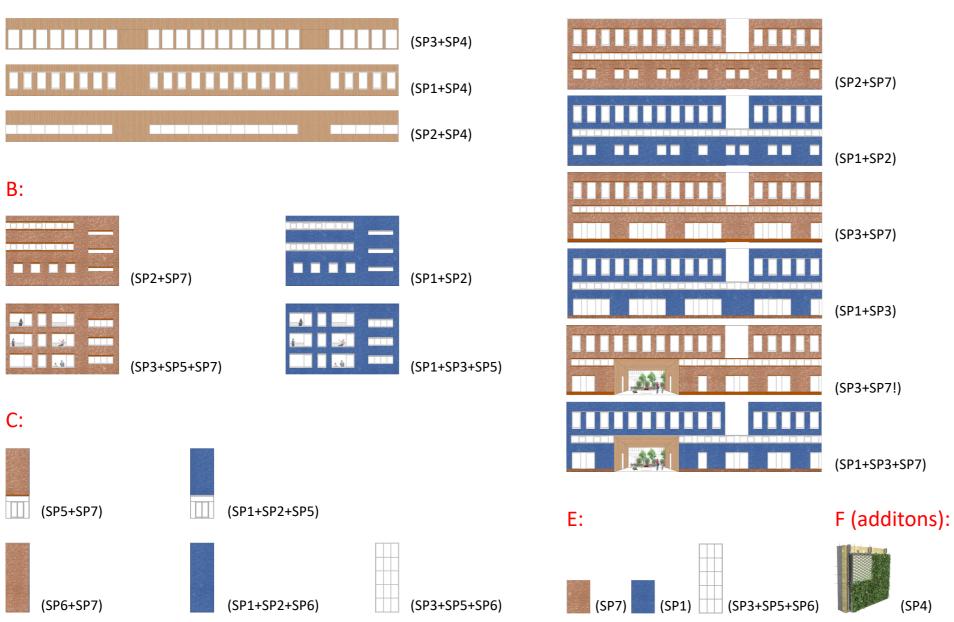
City

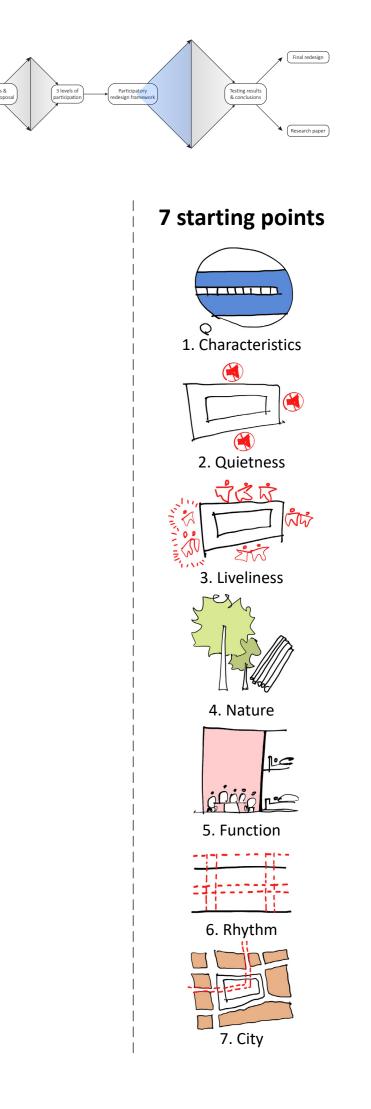
# **REDESIGN SCENARIOS**

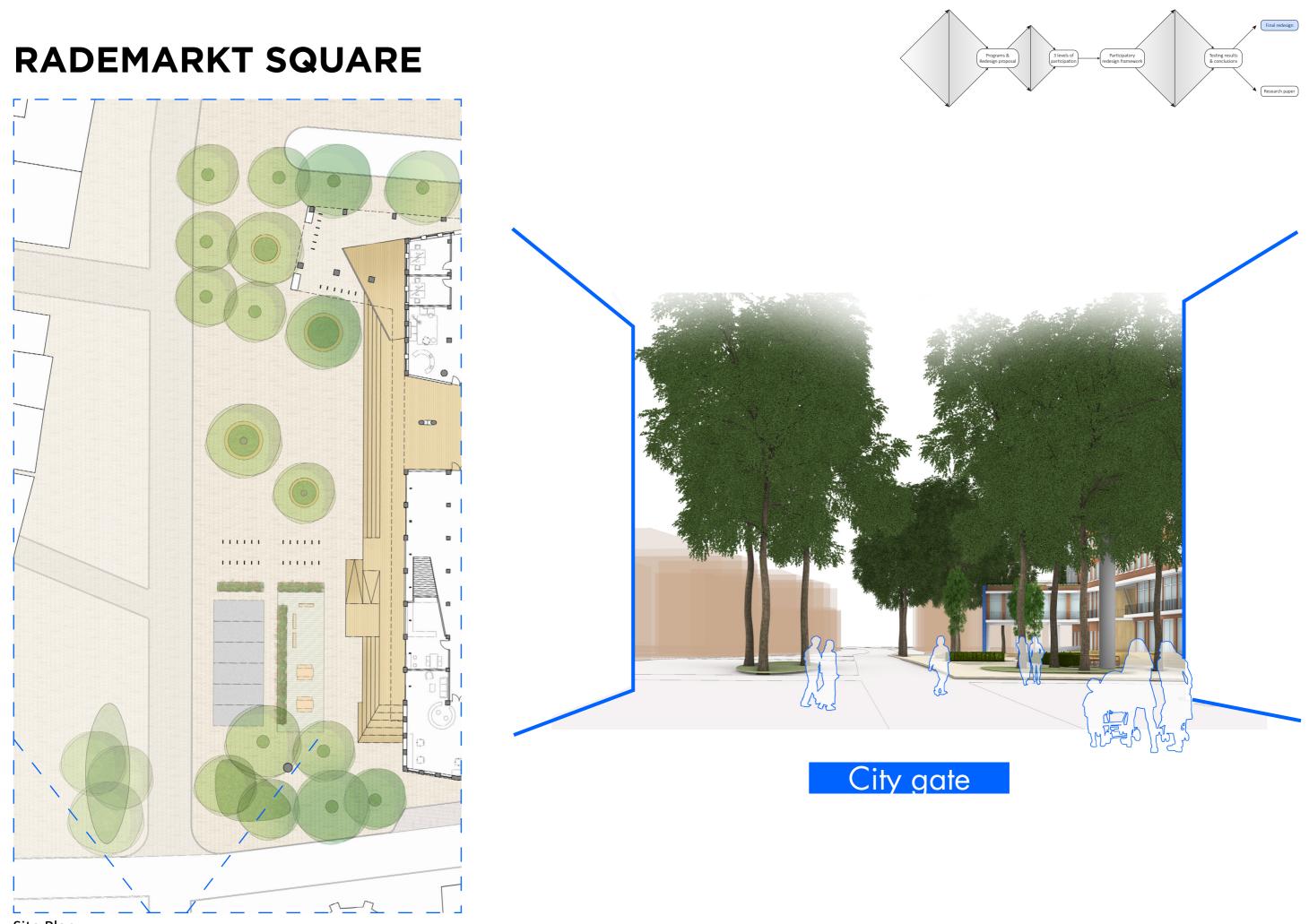


D:

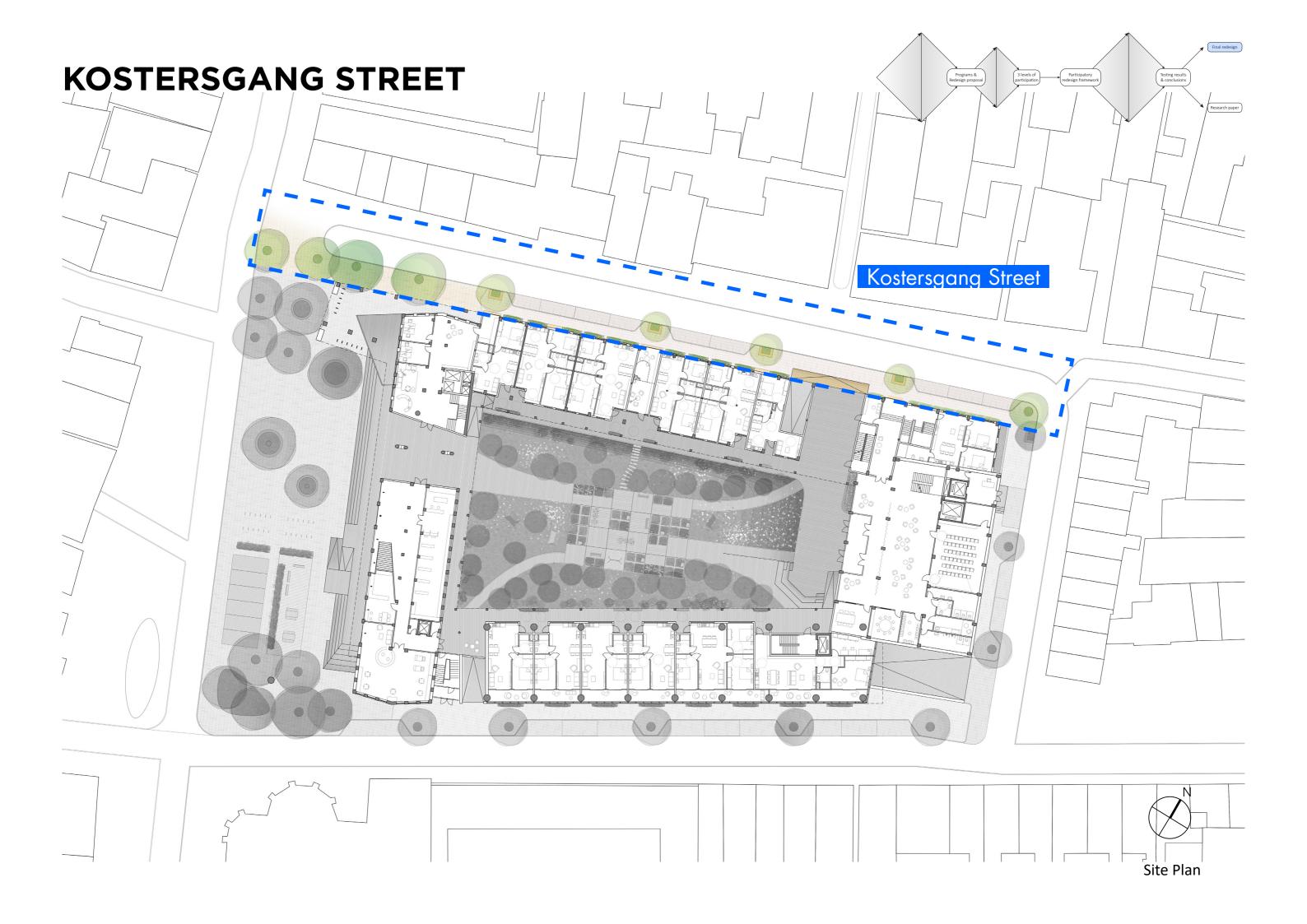
#### A:



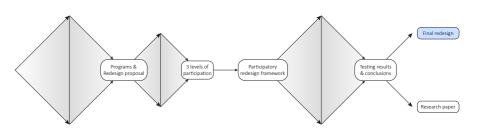




Site Plan

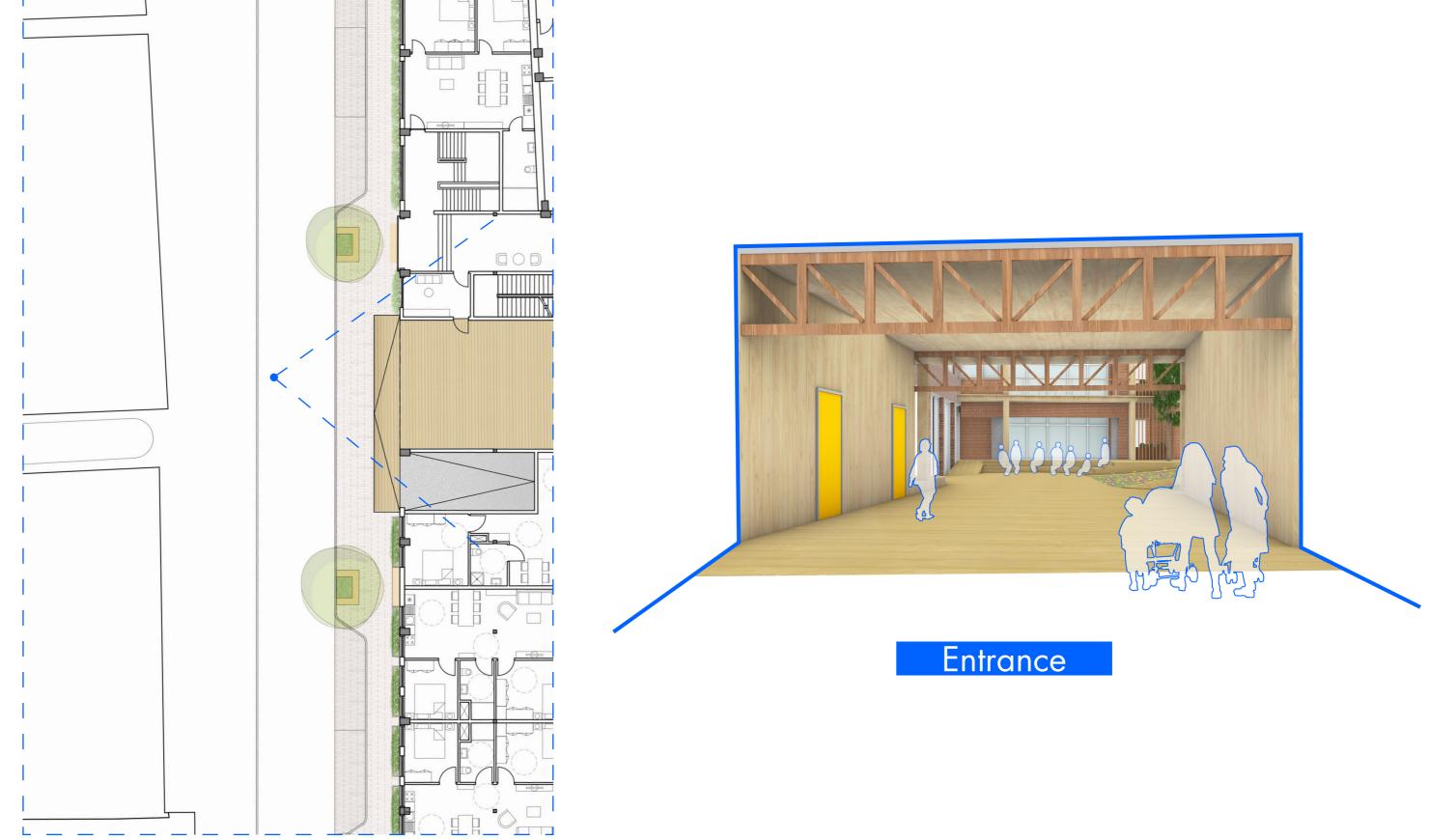


#### **KOSTERSGANG STREET**

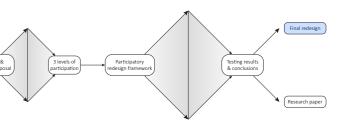


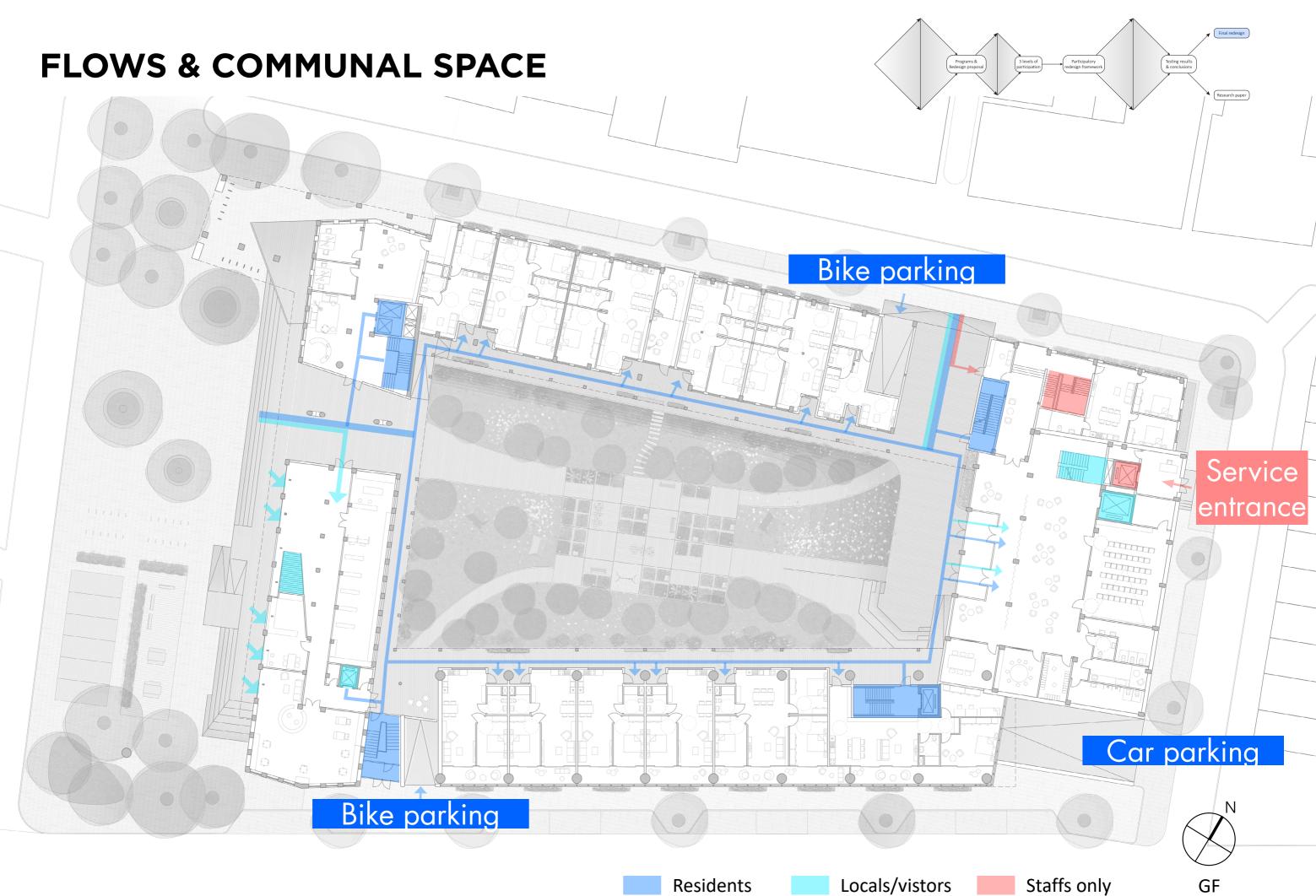


#### **KOSTERSGANG STREET**



Site Plan





# **GRANDMA'S ONE DAY** 1111, 010 010 knitting/painting game/ tea & biscuit . . . . 0

Communal sapce

Residents

Locals/vistors

